

SECTION **CCS**

CRUISE CONTROL SYSTEM

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

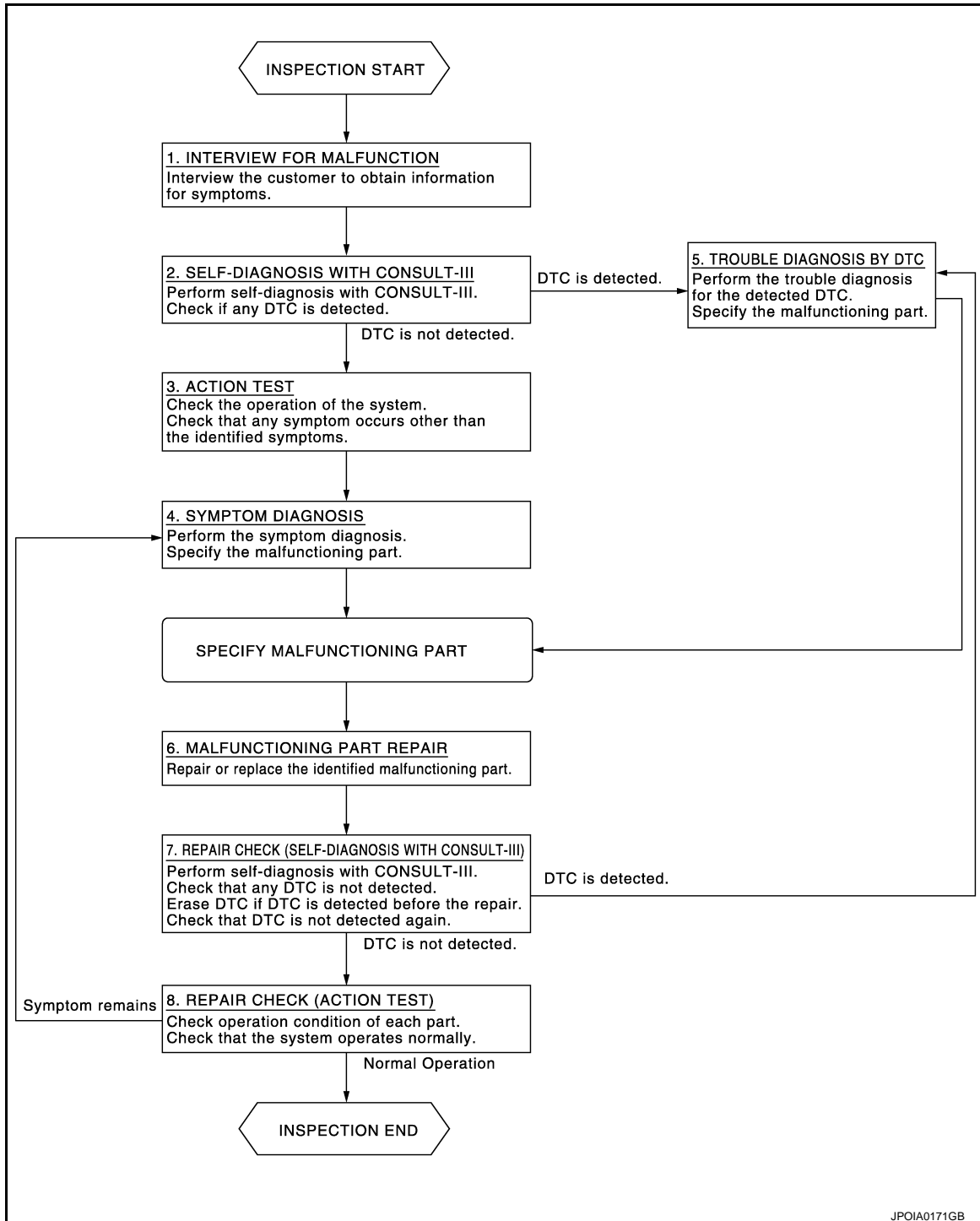
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000003902167

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

NOTE:

The customers are not professionals. Never assume that “maybe the customer means...” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2.SELF-DIAGNOSIS WITH CONSULT-III

1. Perform “All DTC Reading” with CONSULT-III.
2. Check if any DTC is detected in self-diagnosis results of “ICC”.

Is any DTC detected?

- YES >> GO TO 5.
NO >> GO TO 3.

3.ACTION TEST

Perform the ICC system action test to check the operation status. Refer to [CCS-18, "ACTION TEST : Description"](#).

Check if any other malfunctions occur.

>> GO TO 4.

4.SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to [CCS-163, "Symptom Table"](#).

>> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

1. Check the DTC in the self-diagnosis results.
2. Perform trouble diagnosis for the detected DTC. Refer to [CCS-158, "DTC Index"](#).

NOTE:

If “DTC: U1000” is detected, first diagnose the CAN communication system or ITS communication system.

>> GO TO 6.

6.MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 7.

7.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

1. Erases self-diagnosis results.
2. Perform “All DTC Reading” again after repairing or replacing the malfunctioning parts.
3. Check if any DTC is detected in self-diagnosis results of “ICC”.

Is any DTC detected?

- YES >> GO TO 5.
NO >> GO TO 8.

8.REPAIR CHECK (ACTION TEST)

Perform the ICC system action test. Check if the malfunction symptom is solved or no other symptoms occur.

Is there any malfunction symptom?

- YES >> GO TO 4.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ICC SENSOR INTEGRATED UNIT)

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ICC SENSOR INTEGRATED UNIT) : Description

INFOID:000000003902168

- Always perform the laser beam aiming adjustment after removing and installing or replacing the ICC sensor integrated unit.

CAUTION:

The system does not operate normally unless the laser beam aiming adjustment is performed. Always perform it.

- Perform the ICC system action test to check that the ICC system operates normally.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ICC SENSOR INTEGRATED UNIT) : Special Repair Requirement

INFOID:000000003902169

1. LASER BEAM AIMING ADJUSTMENT

Adjust the laser beam aiming. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. ICC SYSTEM ACTION TEST

1. Perform the ICC system action test. Refer to [CCS-18. "ACTION TEST : Description"](#).
2. Check that the ICC system operates normally.

>> INSPECTION END

LASER BEAM AIMING ADJUSTMENT

LASER BEAM AIMING ADJUSTMENT : Description

INFOID:000000003902170

OUTLINE OF LASER BEAM AIMING ADJUSTMENT

Always adjust the laser beam aiming after removing and installing or replacing the ICC sensor integrated unit.

CAUTION:

The system does not operate normally unless the laser beam aiming adjustment is performed. Always perform it.

1. Set the ICC target board [SST: KV99110100 (J-45718)] to the correct position in front of the vehicle.
2. Set the laser beam aiming mode ("LASER BEAM ADJUST" on "Work support") with CONSULT-III, and then perform the adjustment according to the display. (Manually turn the up-down direction adjusting screw for vertical adjustment. ICC sensor integrated unit adjusts the automatic aiming for the horizontal direction.)

CAUTIONARY POINT FOR LASER BEAM AIMING ADJUSTMENT

CAUTION:

- For laser beam aiming adjustment, choose a level location where a view can be obtained without any obstruction as far as 12 m (39 ft) or more in the forward direction.
- Adjust laser beam aiming for 5 seconds or more after starting engine.
- Adjust the laser beam aiming with CONSULT-III. (The laser beam aiming cannot be adjusted without CONSULT-III.)
- Never enter the vehicle during laser beam aiming adjustment.
- Never look directly into the laser beam source (ICC sensor integrated unit body window) during laser beam aiming adjustment.
- Laser beam aiming adjustment is performed at idle. At this time, turn the headlamps OFF.

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CCS

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Preparation)

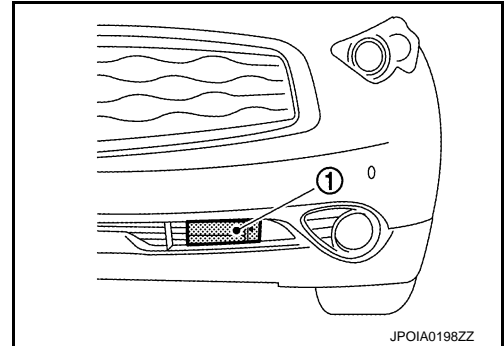
INFOID:000000003902171

1. ADVANCE PREPARATION FOR LASER BEAM AIMING ADJUSTMENT

1. Adjust all tire pressure to the specified value.
2. Empty the vehicle. (Remove any luggage from the passenger compartment, luggage room, etc.)
3. Shift the selector lever to "P" position, and release the parking brake.
4. Fully fill the fuel tank, and then check that the coolant and oils are filled up to correct level.
5. Clean off the ICC sensor integrated unit body window with a soft cloth.

1 : ICC sensor integrated unit

>> Go to [CCS-14. "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement \(Setting The ICC Target Board\)"](#).



LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Setting The ICC Target Board)

INFOID:000000003902172

DESCRIPTION

Accurate adjustment of the laser beam requires that the ICC target board be accurately positioned.

CAUTION:

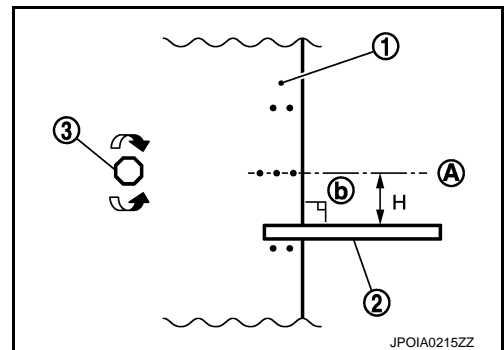
If the laser beam is adjusted with the ICC target board in the incorrect position, the ICC system does not function normally.

1. ICC TARGET BOARD HEIGHT ADJUSTMENT

1. Attach the ruler (2) at 14 mm (0.55 in) (H) below the center (A) of the ICC target board (1).

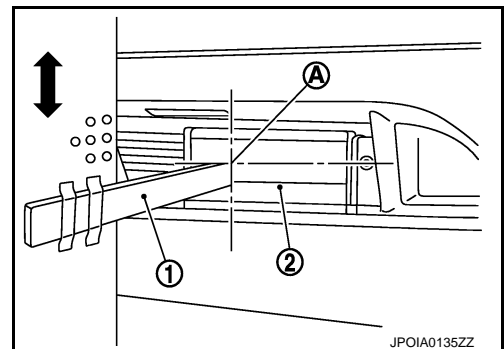
3 : Adjust nut

b : 90°



2. Adjust the ICC target board height to the position aligning the ruler (1) upper side tip with the center of laser beam axis (A).

2 : ICC sensor integrated unit



NOTE:

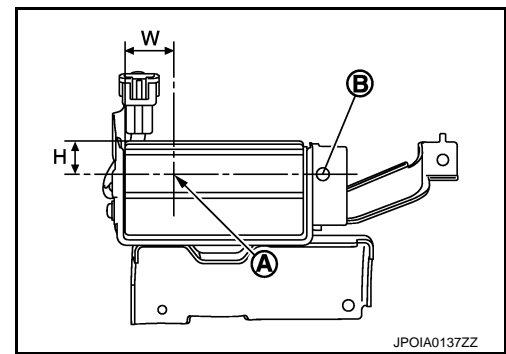
INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

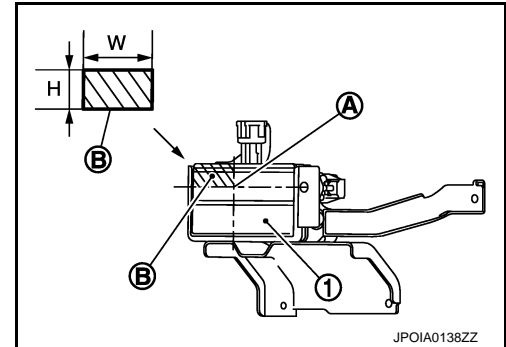
- The center of laser beam axis (A) is located at 38 mm (1.5 in) (W) from the left end of ICC sensor integrated unit and 22 mm (H) (0.87 in) from above when viewed from the front of the vehicle.

B : Up-down direction adjusting screw



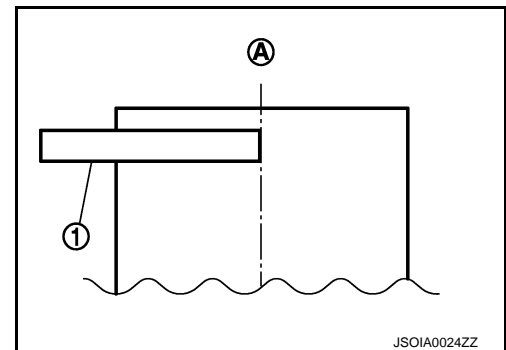
- To identify the laser beam axis center (A) easily, prepare a piece of paper (B) cut to the size of 38 mm (1.5 in) (W) × 22 mm (H) (0.87 in) and attach it on the upper left point of the ICC sensor integrated unit (1).

>> GO TO 2.



2. ADJUSTING SIDE POSITION OF ICC TARGET BOARD

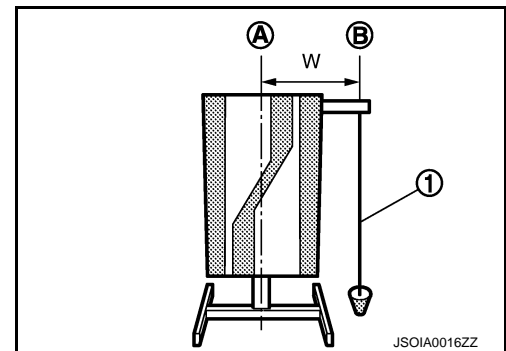
- On the back of the ICC target board, attach the ruler (1) [350 mm (13.78 in) or more] or a similar tool squarely from the ICC target board center (A) in the left direction.



- Suspend a weight from a string (1) attached to its end at the point (B) rightward from the ICC target board center (A).

W [mm (in)] : 315 (12.4)

>> GO TO 3.



3. SETTING ICC TARGET BOARD

- Suspend a thread with weight on tip from the center of the front and rear bumpers. Then, mark the center points on the ground as each weight point.
- Link the front and rear bumpers center points marked on the ground and extend a straight line ahead. Then mark a point 3.9 m (12.8 ft) position ahead of the front bumper. Then, adjust the position of the ICC target board so that the weight comes on the top of the marked point [3.9 m (12.8 ft) position ahead of the front bumper] and face to the vehicle.

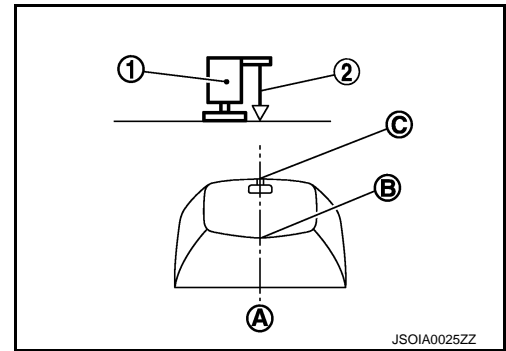
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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

- Adjust the position of the ICC target board (1) so that the extended line (A) that links the center of the rear window glass (the center of the rear window defogger pattern) (B) and the center of the windshield (the setting part of the room mirror) (C) align with the weight suspended (2) from the ICC target board.

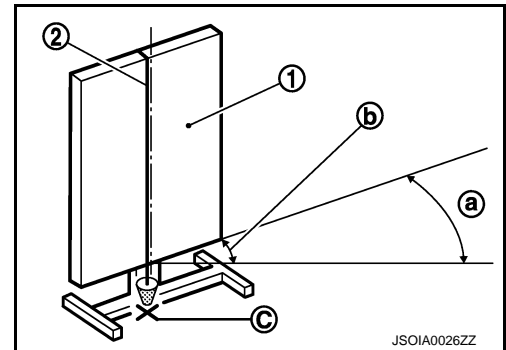


- Remove the thread suspended to the right side of ICC target board and suspend a thread with weight on tip on the center of the ICC target board. Then mark the point of weight on the ground.
- Pivot the edge of the ICC target board 25° (a) to either side.

- 1 : ICC target board
- 2 : String with a weight
- C : ICC target board center marking point

NOTE:

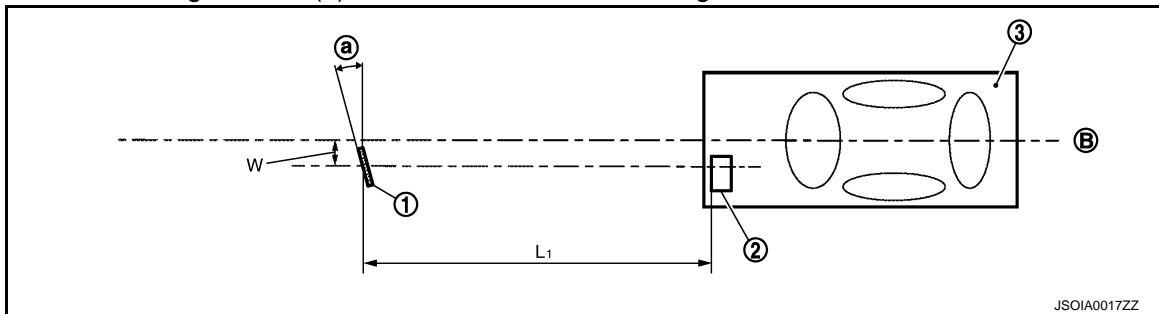
Approx. 90 mm (3.54 in) (b) shift rates the 25° (a) movement.



>> GO TO 4.

4.CHECK THE ICC TARGET BOARD INSTALLATION POSITION

Check that the ICC target board (1) is located as shown in the figure.



- 1. ICC target board
- 2. ICC sensor integrated unit
- 3. Vehicle
- B. Vehicle center
- L1. 4.0 m (13.0 ft)
- W. 315 mm (12.4 in)
- a. 25°

NOTE:

The distance between laser beam axis and ICC target board is 4.0 m (13.0 ft).

>> GO TO 5.

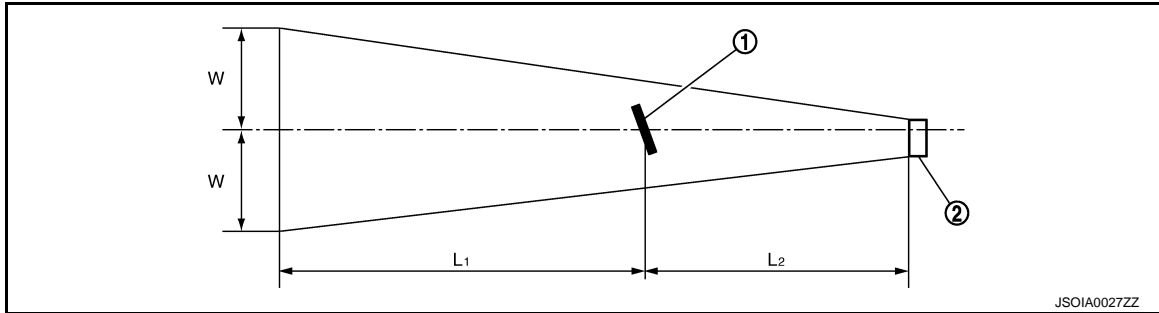
5.CHECK THE ICC TARGET BOARD INSTALLATION AREA

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

Do not place anything other than ICC target board in the space shown in the figure (view from top).



1. ICC target board

2. ICC sensor integrated unit

L1. 6.5 m (21.3 ft)

L2. 4.0 m (13.0 ft)

W. 3.5 m (11.5 ft)

NOTE:

In case the space shown in the figure is not available, cover the side of the ICC target board with a 1400 mm(4.6 ft)-size frosted black board or black cloth.

>> Go to [CCS-17, "LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement \(Laser Beam Aiming Adjustment\)"](#).

LASER BEAM AIMING ADJUSTMENT : Special Repair Requirement (Laser Beam Aiming Adjustment)

INFOID:000000003902173

DESCRIPTION

- Adjust the laser beam aiming in a vertical direction with CONSULT-III as per the following.
- The laser beam aiming adjustment in a horizontal direction is performed automatically with CONSULT-III.

CAUTION:

- **Never look directly into the laser beam source (ICC sensor integrated unit body window) during laser beam aiming adjustment.**
- **Perform all necessary work for laser beam aiming adjustment until the adjustment completes as shown in the procedure. If the procedure does not complete, the ICC system is inoperable.**

1. SET CONSULT-III TO THE LASER BEAM AIMING ADJUSTMENT MODE

1. Start the engine.
2. Connect CONSULT-III and select "Work support" of "ICC".
3. Select "LASER BEAM ADJUST" after the "Work support" screen is displayed.
4. Select "START" after the "LASER BEAM ADJUST" screen is displayed.

NOTE:

If the adjustment screen does not appear within approximately 10 seconds after "LASER BEAM ADJUST" is selected, the following causes are possible.

- The ICC target board is not installed in the correct position.
- Adequate space is not secured around the ICC target board.
- The laser beam aiming adjustment exceeds its proper installation range.
- Deformation of vehicle body.
- Deformation of unit.
- Deformation of bracket.
- The area is not suitable for the adjustment work.
- ICC sensor integrated unit body window is not clean.
- The ICC system warning lamp illuminates.

>> GO TO 2.

2. LASER BEAM AIMING ADJUSTMENT

After "ADJUST THE VERTICAL OF LASER BEAM AIMING" is displayed on CONSULT-III screen, adjust by turning the up-down direction adjusting screw until "U/D CORRECT" becomes ± 4 or less.

NOTE:

INSPECTION AND ADJUSTMENT

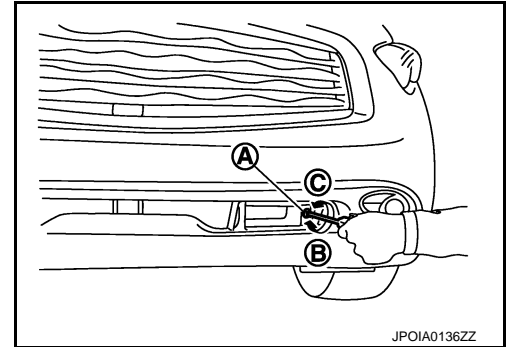
< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

- Turn the up-down direction adjusting screw slowly. The value change on display is slower than actual movement of the ICC sensor integrated unit. Wait for 2 seconds every time the up-down direction adjusting screw is turned half a rotation.
- Turning the up-down direction adjusting screw (A) clockwise directs the laser beam downward (B). The laser beam directs upward (C) when turning up-down direction adjusting screw counterclockwise.

CAUTION:

Be careful not to cover the ICC sensor integrated unit body window with a hand or the other part of body of worker during adjustment.



>> GO TO 3.

3. LASER BEAM AIMING CONFIRMATION

1. When the "U/D CORRECT" value becomes ± 4 or less, check that no value greater than ± 4 appears when the vehicle is left with no load on the ICC sensor integrated unit (hand removed) for at least 2 seconds.
2. When "COMPLETED THE VERTICAL AIMING OF LASER BEAM" display appears, touch "END".

CAUTION:

Always check that the value of "U/D CORRECT" remains ± 4 or less when the ICC sensor integrated unit is left alone for at least 2 seconds.

3. Check that "ADJUSTING AUTOMATIC HORIZONTAL LASER BEAM AIMING" is displayed and wait for a short period of time. (The maximum: Approx 10 seconds).
4. Check that "Normally Completed" is displayed, and select "End" to end "LASER BEAM ADJUST".

CAUTION:

Once "LASER BEAM ADJUST" is started with CONSULT-III, always continue the work until the horizontal laser beam aiming adjustment is completed successfully. If the job is stopped midway, the laser beam aiming is not adjusted and the ICC system cannot operate.

>> LASER BEAM AIMING ADJUSTMENT END

ACTION TEST

ACTION TEST : Description

INFOID:000000003902174

Always perform the ICC system action test to check that the ICC system operates normally after replacing the ICC sensor integrated unit or repairing any ICC system malfunction.

CAUTION:

- Always drive safely when performing the action test.
- Turn the DCA system to OFF when performing the action test.

ACTION TEST : Special Repair Requirement (Vehicle-To-Vehicle Distance Control Mode)

INFOID:000000003902175

NOTE:

- When there is no vehicle ahead, drive at the set speed steadily.
- When there is a vehicle ahead, control to maintain distance from the vehicle ahead, watching its speed.
- The running speed can be set between 32 km/h (20 MPH) and 144 km/h (90 MPH).

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

1. CHECK FOR MAIN SWITCH

1. Start the engine.

INSPECTION AND ADJUSTMENT

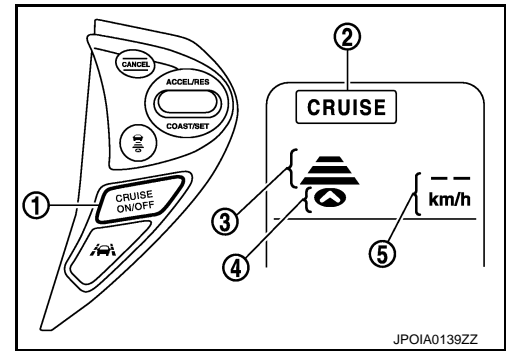
< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

- Press the MAIN switch (1) (less than 1.5 seconds).

Information display status

MAIN switch indicator (2)	:	ON
Set distance indicator (3)	:	Long mode
Own vehicle indicator (4)	:	ON
Set vehicle speed indicator (5)	:	"_ _ _"
	:	"km/h" ("MPH")






- Check the ICC system display on the information display to check that the vehicle-to-vehicle distance control mode is ready for activation.
- Press the MAIN switch, and check that the ICC system display on the information display turns OFF when the ICC system is deactivated.
- Check that the ICC system display on the information display turns OFF after starting the engine again.

>> GO TO 2.

2. CHECK FOR DISTANCE SWITCH

- Start the engine.
- Press the MAIN switch (less than 1.5 seconds).
- Press the DISTANCE switch.
- Check that the set distance indicator changes display in order of: (Long)→(Middle)→(Short).

Distance	Display	Approximate distance at 100 km/h (60 MPH) [m (ft)]
Long	 100 km/h	62 (203)
Middle	 100 km/h	48 (157)
Short	 100 km/h	34 (112)

NOTE:

When the MAIN switch is turned ON, initial setting set to (Long).

>> GO TO 3.

3. CHECK FOR RESUME/ACCELERATE, SET/COAST, AND CANCEL SWITCHES

- Check that RESUME/ACCELERATE, SET/COAST, CANCEL switches are operated smoothly.
- Check that switches come up as hand is released from the switches.

>> GO TO 4.

4. SET CHECKING (1)

- Start the engine.
- Press the MAIN switch (less than 1.5 seconds) and turn the vehicle-to-vehicle distance control mode ON.
- Drive the vehicle at 32 km/h (20 MPH) or more.

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

4. Push down the SET/COAST switch.
5. Check that the desired speed is set and vehicle-to-vehicle distance control mode control starts when releasing SET/COAST switch.

NOTE:

The set vehicle speed is indicated on the set vehicle speed indicator in the ICC system display on the information display.

>> GO TO 5.

5. CHECK FOR INCREASE OF CRUISING SPEED (1)

1. Set the vehicle-to-vehicle distance control mode at desired speed.
2. Check that the set speed increases by 1 km/h (1 MPH) as RESUME/ACCELERATE switch is pushed up.

NOTE:

The maximum set speed of the vehicle-to-vehicle distance control mode is 144 km/h (90 MPH).

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

>> GO TO 6.

6. CHECK FOR DECREASE OF CRUISING SPEED (1)

1. Set the vehicle-to-vehicle distance control mode at desired speed.
2. Check that the set speed decreases by 1 km/h (1 MPH) as SET/COAST switch is pushed down.

NOTE:

- The minimum set speed is approximately 32 km/h (20 MPH).
- Cancel the control automatically when the vehicle speed is less than approximately 24 km/h (15 MPH) and when the system does not detect any vehicle ahead.

>> GO TO 7.

7. SET CHECKING (2)

1. Stop the vehicle.
2. Drive the vehicle at less than approximately 32 km/h (20 MPH).
3. Push down the SET/COAST switch when the system detects a vehicle ahead.
4. Check that the vehicle-to-vehicle distance control mode is performed so that the vehicle maintains a proper distance according to the vehicle speed [maximum: approximately 32 km/h (20 MPH)] when releasing SET/COAST switch.

NOTE:

- The vehicle-to-vehicle distance control mode cannot be set when the vehicle speed is less than 32 km/h (20 MPH) and when a vehicle ahead is not detected.
- Cancel the control automatically when the vehicle speed is 24 km/h (15 MPH) or less during the control and when the system does not detect any vehicle ahead.
- The set vehicle speed indicator in the ICC system display on the information display is set to 32 km/h (20 MPH).

>> GO TO 8.

8. CHECK FOR INCREASE OF CRUISING SPEED (2)

1. Set the vehicle-to-vehicle distance control mode when the vehicle speed is less than approximately 32 km/h (20 MPH) and when a vehicle ahead is detected.
2. Check that the set speed increases by 1 km/h (1 MPH) as RESUME/ACCELERATE switch is pushed up.

NOTE:

The maximum set speed of the vehicle-to-vehicle distance control mode is 144 km/h (90 MPH).

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

>> GO TO 9.

9. CHECK FOR DECREASE OF CRUISING SPEED INSPECTION (2)

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

1. Set the vehicle-to-vehicle distance control mode when the vehicle speed is less than approximately 32 km/h (20 MPH) and when a vehicle ahead is detected.
2. Set the set vehicle speed to the desired vehicle speed according to "check for increase of cruising speed".
3. Check that the set speed decreases by 1 km/h (1 MPH) as SET/COAST switch is pushed down.

NOTE:

- The minimum the set speed is approximately 32 km/h (20 MPH).
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges a standstill with a warning chime.

CAUTION:

The creep occurs because the stop status is not maintained.

>> GO TO 10.

10. CHECK FOR CANCELLATION OF VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE

Check that the vehicle-to-vehicle distance control mode is canceled when performing the following operations.

- When the brake pedal is depressed after vehicle-to-vehicle distance control mode is set and the vehicle is driven.
- When the selector lever is in the "N" position after vehicle-to-vehicle distance control mode is set and the vehicle is driven.
- When the MAIN switch is turned OFF after vehicle-to-vehicle distance control mode is set and the vehicle is driven.
- When the CANCEL switch is pressed after vehicle-to-vehicle distance control mode is set and the vehicle is driven.

>> GO TO 11.

11. CHECK FOR RESTORING SPEED THAT IS SET BY VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE BEFORE CANCELLATION

Check that the vehicle restores the previous speed kept before the system deactivation when performing the following operations.

- Drive the vehicle when the vehicle-to-vehicle distance control mode is set and depress the brake pedal to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch.
- Drive the vehicle when the vehicle-to-vehicle distance control mode is set and shift the selector lever to the "N" position to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when shifting the selector lever to the "D" position and pushing up the RESUME/ACCELERATE switch.
- Drive the vehicle when the vehicle-to-vehicle distance control mode is set and press the CANCEL switch to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch.

>> INSPECTION END

ACTION TEST : Special Repair Requirement [Conventional (Fixed Speed) Cruise Control Mode]

INFOID:000000003902176

NOTE:

The running speed can be set between 40 km/h (25 MPH) and 144 km/h (90 MPH).

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

1. CHECK FOR MAIN SWITCH

1. Start the engine.

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INSPECTION AND ADJUSTMENT

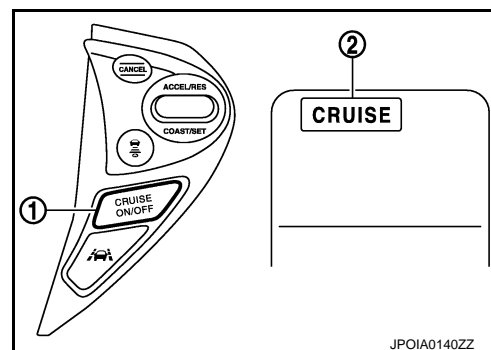
< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

2. Press the MAIN switch (1) (1.5 seconds or more).

Information display status

MAIN switch indicator (2) : ON



3. Check that the ICC system display on the information display turns on and the display is ready for activation.
4. Press the MAIN switch, and check that the ICC system display on the information display turns OFF when the ICC system is deactivated.
5. Check that the ICC system display on the information display turns OFF after starting the engine again.

>> GO TO 2.

2. CHECK FOR RESUME/ACCELERATE, SET/COAST, AND CANCEL SWITCHES

1. Check that RESUME/ACCELERATE, SET/COAST, CANCEL switches are operated smoothly.
2. Check that switches come up as hand is released from the switches.

>> GO TO 3.

3. SET CHECKING

1. Start the engine.
2. Press the MAIN switch (1.5 seconds or more) and turn the conventional (fixed speed) cruise control mode to ON.
3. Drive the vehicle at 40 km/h (25 MPH) or more.
4. Push down the SET/COAST switch.
5. Check that the desired speed is set and conventional (fixed speed) cruise control mode control starts when releasing SET/COAST switch.

NOTE:

- The set vehicle speed is not displayed in the ICC system display on the information display.
- Display the set status in the ICC system display on the information display.

>> GO TO 4.

4. CHECK FOR INCREASE OF CRUISING SPEED

1. Set the vehicle speed to any desired speed, and drive the vehicle.
2. Check that the set speed increases by 1.6 km/h (1 MPH) as RESUME/ACCELERATE switch is pushed up.

NOTE:

- The maximum set speed is 144 km/h (90 MPH).
- The set vehicle speed increases while pushing up the RESUME/ACCELERATE switch.

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

>> GO TO 5.

5. CHECK FOR DECREASE OF CRUISING SPEED

1. Set the vehicle speed to any desired speed, and drive the vehicle.
2. Check that the set speed decreases by 1.6 km/h (1 MPH) as SET/COAST switch is pushed down.

NOTE:

- The minimum set speed is 40 km/h (25 MPH).
- The set vehicle speed decreases while pressing down the SET/COAST switch.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[ICC (FULL SPEED RANGE)]

- Cancel the control automatically when the vehicle speed lowers to less than approximately 32 km/h (20 MPH).

>> GO TO 6.

6. CHECK FOR CANCELLATION OF CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE

Check that the conventional (fixed speed) cruise control mode is canceled when performing the following operations.

- When the brake pedal is depressed after the conventional (fixed speed) cruise control mode is set and the vehicle is driven.
- When the selector lever is in the "N" position after the conventional (fixed speed) cruise control mode is set and the vehicle is driven.
- When the MAIN switch is turned OFF after the conventional (fixed speed) cruise control mode is set and the vehicle is driven.
- When the CANCEL switch is pressed after the conventional (fixed speed) cruise control mode is set and the vehicle is driven.

>> GO TO 7.

7. CHECK FOR RESTORING SPEED THAT IS SET BY CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE BEFORE CANCELLATION

Check that the vehicle restores the previous speed kept before the system deactivation when performing the following operations.

- Drive the vehicle when the conventional (fixed speed) cruise control mode is set and depress the brake pedal to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch at the vehicle speed approximately 40 km/h (25 MPH) or more.
- Drive the vehicle when the conventional (fixed speed) cruise control mode is set and shift the selector lever is in the "N" position to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when shifting the selector lever is in the "D" position and pushing up the RESUME/ACCELERATE switch at the vehicle speed of approximately 40 km/h (25 MPH) or more.
- Drive the vehicle when the conventional (fixed speed) cruise control mode is set and press the CANCEL switch to cancel the control. Check that the vehicle restores the previous vehicle speed kept before the system deactivation when pushing up the RESUME/ACCELERATE switch at the vehicle speed of approximately 40 km/h (25 MPH) or more.

>> INSPECTION END

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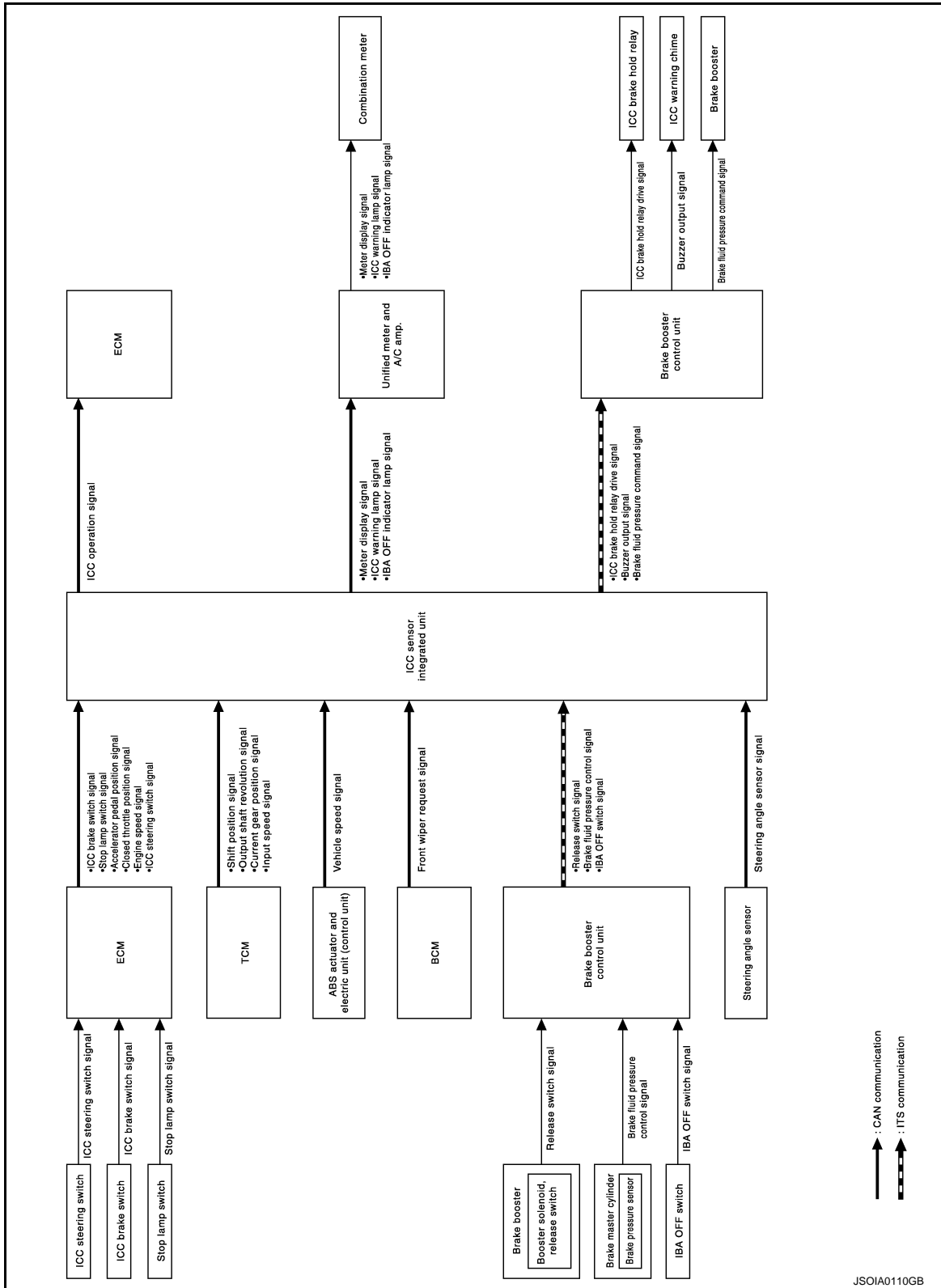
CCS

SYSTEM DESCRIPTION

ICC (FULL SPEED RANGE)

System Diagram

INFOID:000000003902177



JSOIA0110GB

System Description

INFOID:000000003902178

DESCRIPTION

ICC (FULL SPEED RANGE)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

The Intelligent Cruise Control (Full Speed Range) system maintains a selected distance from the vehicle in front of own vehicle within the speed range of 0 to 144 km/h (0 to 90 MPH) up to the set speed. The set speed can be selected by the driver between 32 to 144 km/h (20 to 90 MPH). The vehicle travels at a set speed when the road ahead is clear.

The ICC system can be set to one of two cruise control modes:

CAUTION:

Never set the cruise speed exceeding the posted speed limit.

Vehicle-to-vehicle Distance Control Mode

For maintaining a selected distance between own vehicle and the vehicle in front of own vehicle up to the pre-set speed. Refer to [CCS-29, "System Description"](#).

Conventional (Fixed Speed) Cruise Control Mode

For cruising at a preset speed. Refer to [CCS-38, "System Description"](#).

NOTE:

In the Conventional (Fixed Speed) Cruise Control Mode, a warning chime will not sound to warn driver if own vehicle are too close to the vehicle ahead.

WARNING:

Always drive carefully and attentively when using either cruise control mode. To avoid serious injury or death, do not rely on the system to prevent accidents or to control the vehicle's speed in emergency situations. Do not use cruise control except in appropriate road and traffic conditions.

Forward Collision Warning (FCW)

FCW share the systems and components with ICC system. Refer to [CCS-370, "System Description"](#).

Brake Assist (With Preview Function)

Brake Assist (With Preview Function) share the systems and components with ICC system. Refer to [BRC-140, "System Description"](#).

Intelligent Brake Assist (IBA) System

IBA system share the systems and components with ICC system. Refer to [BRC-146, "System Description"](#).

ICC SENSOR INTEGRATED UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name	Description	
ECM	Accelerator pedal position signal	Receives the accelerator pedal position signal from ECM via CAN communication.	
	ICC steering switch signal	MAIN switch signal	Receives the ICC steering switch signal from ECM via CAN communication.
		SET/COAST switch signal	
		CANCEL switch signal	
		RESUME/ACCELERATE switch signal	
		DISTANCE switch signal	
	ICC brake switch signal	Receives the ICC brake switch signal from ECM via CAN communication.	
	Stop lamp switch signal	Receives the stop lamp switch signal from ECM via CAN communication.	
Closed throttle position signal	Receives the closed throttle position signal from ECM via CAN communication.		
Engine speed signal	Receives the engine speed signal from ECM via CAN communication.		

ICC (FULL SPEED RANGE)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

Transmit unit	Signal name	Description
TCM	Shift position signal	Receives the shift position signal from TCM via CAN communication.
	Output shaft revolution signal	Receives the output shaft revolution signal from TCM via CAN communication.
	Current gear position signal	Receives the current gear position signal from TCM via CAN communication.
	Input speed signal	Receives the input speed signal from TCM via CAN communication.
Brake booster control unit	Brake fluid pressure control signal	Receives the brake fluid pressure control signal from the brake booster control unit via ITS communication.
	Release switch signal	Receives the release switch signal from the brake booster control unit via ITS communication.
	IBA OFF switch signal	Receives the IBA OFF switch signal from the brake booster control unit via ITS communication.
ABS actuator and electric unit (control unit)	Vehicle speed signal	Receives the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) via CAN communication.
BCM	Front wiper request signal	Receives the front wiper request signal from BCM via CAN communication.
Steering angle sensor	Steering angle sensor signal	Receives the steering angle sensor signal from the steering angle sensor via CAN communication.

Output Signal Item

Reception unit	Signal name	Description	
ECM	ICC operation signal	Transmits the ICC operation signal to ECM via CAN communication.	
Combination meter (through unified meter and A/C amp.)	Meter display signal	Own vehicle indicator signal	Transmits the meter display signal to the combination meter (through unified meter and A/C amp.) via CAN communication.
		Vehicle ahead detection indicator signal	
		Set vehicle speed indicator signal	
		Set distance indicator signal	
		MAIN switch indicator signal	
		SET switch indicator signal	
	ICC warning lamp signal	Transmits the ICC warning lamp signal to the combination meter (through unified meter and A/C amp.) via CAN communication.	
	IBA OFF indicator lamp signal	Transmits the IBA OFF indicator lamp signal to the combination meter (through unified meter and A/C amp.) via CAN communication.	
ICC warning chime	Buzzer output signal	<ul style="list-style-type: none"> Transmits the buzzer output signal to the brake booster control unit via ITS communication. The brake booster control unit outputs the buzzer output signal and operates the ICC warning chime. 	
ICC brake hold relay	ICC brake hold relay drive signal	<ul style="list-style-type: none"> Transmits the ICC brake hold relay drive signal to the brake booster control unit via ITS communication. The brake booster control unit outputs the ICC brake hold relay drive signal and operates the ICC brake hold relay. 	
Brake booster control unit	Brake fluid pressure command signal	Transmits the brake fluid pressure command signal to the brake booster control unit via ITS communication.	

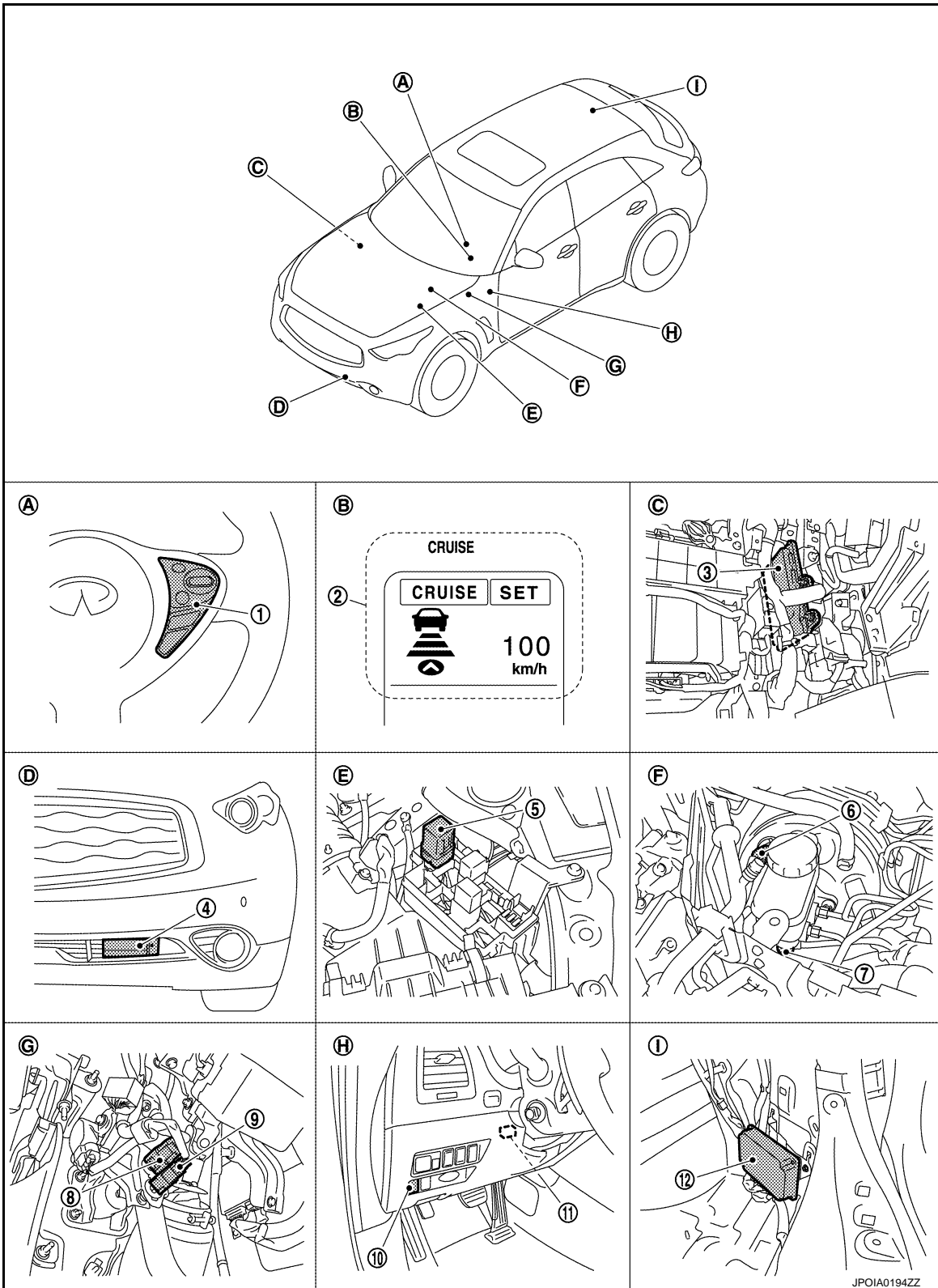
ICC (FULL SPEED RANGE)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

Component Parts Location

INFOID:000000003902179



1. ICC steering switch

4. ICC sensor integrated unit

7. Brake pressure sensor

10. IBA OFF switch

2. Information display, ICC system warning lamp

5. ICC brake hold relay

8. Stop lamp switch

11. ICC warning chime

3. ECM

6. Booster solenoid/Release switch

9. ICC brake switch

12. Brake booster control unit

ICC (FULL SPEED RANGE)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

- | | | |
|------------------------------|---------------------------------------|---------------------------------------|
| A. Steering wheel (RH) | B. On the combination meter | C. Behind the glove box |
| D. Front bumper (LH) | E. Engine room (LH) | F. Inside brake master cylinder cover |
| G. Upper side of brake pedal | H. Instrument driver lower panel (LH) | I. Luggage room (RH) |

Component Description

INFOID:000000003902180

×: Applicable

Component	Function Description			Description
	*1	*2	*3	
ICC sensor integrated unit	×	×	×	Refer to CCS-52, "Description" .
ECM	×	×	×	Refer to CCS-87, "Description" .
ABS actuator and electric unit (control unit)	×	×	×	Refer to CCS-58, "Description" .
BCM	×			Transmits the front wiper request signal to ICC sensor integrated unit via CAN communication.
TCM	×	×		Refer to CCS-129, "Description" .
Unified meter and A/C amp.	×	×	×	Receives the meter display signal, ICC warning lamp signal, and IBA OFF indicator lamp signal from ICC sensor integrated unit via CAN communication and transmits them to the combination meter via the communication line.
Combination meter	×	×	×	Performs the following operations using the signals received from the unified meter and A/C amp. via the communication line. <ul style="list-style-type: none"> Displays the ICC system operation status using the meter display signal. Illuminates the ICC system warning lamp using the ICC warning lamp signal. Illuminates the IBA OFF indicator lamp using the IBA OFF indicator lamp signal.
ICC brake switch	×	×	×	Refer to CCS-60, "Description" .
Stop lamp switch	×	×	×	
ICC brake hold relay	×		×	Refer to CCS-80, "Description" .
Brake booster control unit	×	×	×	Refer to CCS-98, "Description" .
Brake booster	×		×	Refer to CCS-98, "Description" .
Brake pressure sensor	×		×	Refer to CCS-68, "Description" .
Booster solenoid/Release switch	×		×	<ul style="list-style-type: none"> Refer to CCS-70, "Description" for booster solenoid. Refer to CCS-73, "Description" for release switch.
ICC warning chime	×	×	×	Refer to CCS-142, "Description" .
Steering angle sensor	×			Refer to CCS-123, "Description" .
IBA OFF switch			× ^{NOTE}	Refer to CCS-117, "Description" .

*1: Vehicle-to-vehicle distance control mode

*2: Conventional (fixed speed) cruise control mode

*3: IBA system and Brake Assist (With Preview Function)

NOTE:

Only IBA system uses

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

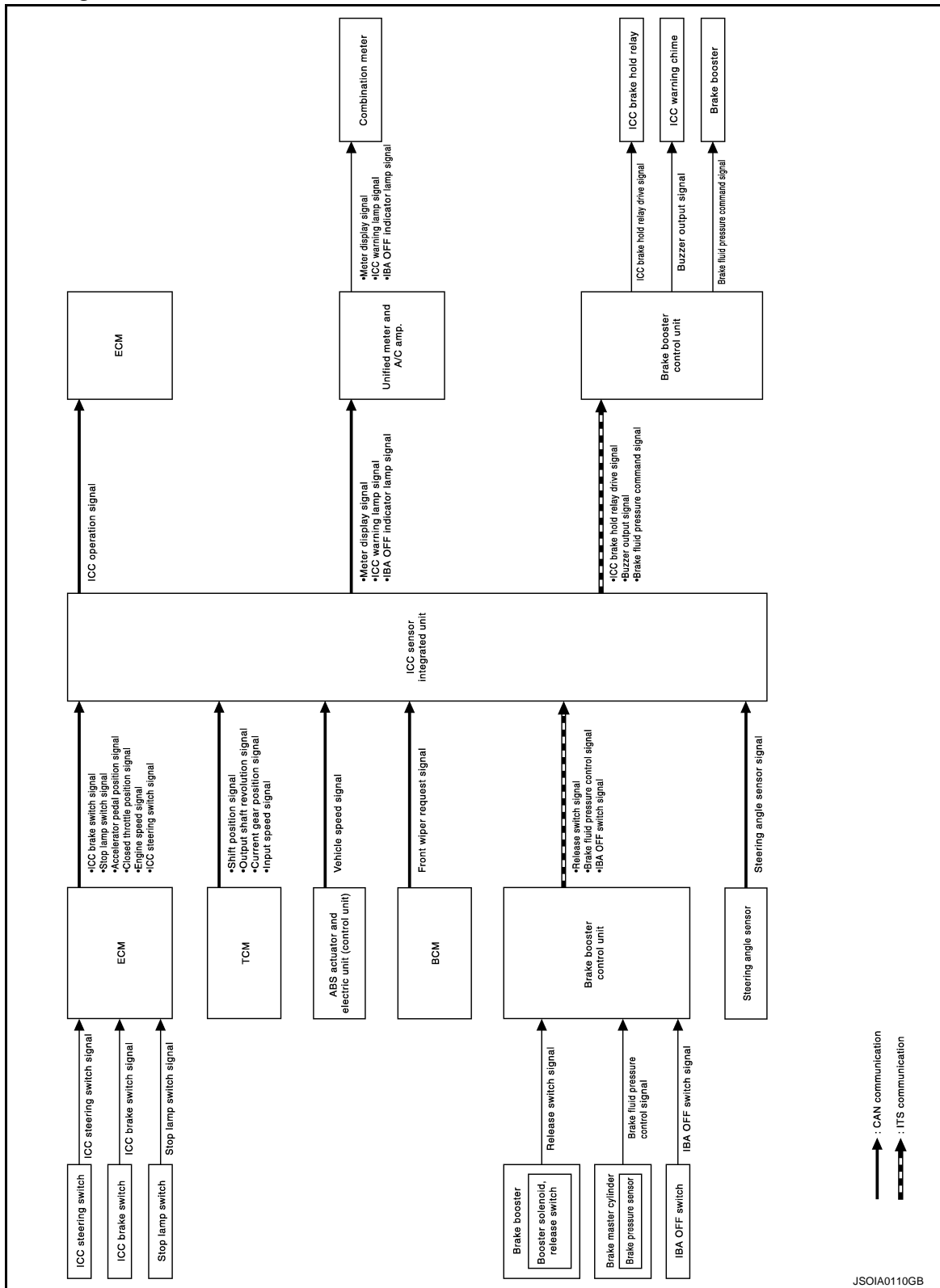
< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

System Diagram

INFOID:000000003902181



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System Description

INFOID:000000003902182

FUNCTION DESCRIPTION

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

In the vehicle-to-vehicle distance control mode, the Intelligent Cruise Control (ICC) system automatically maintains a selected distance from the vehicle traveling in front of own vehicle according to that vehicle's speed (up to the set speed), or at the set speed when the road ahead is clear.

With ICC system, the driver can maintain the same speed as other vehicles without the constant need to adjust the set speed as driver would with a normal cruise control system.

The following items are controlled in the vehicle-to-vehicle distance control mode.

- When there are no vehicles traveling ahead, the vehicle-to-vehicle distance control mode maintains the speed set by the driver. The set speed range is between approximately 32 and 144 km/h (20 and 90 MPH).
- When there is a vehicle traveling ahead, the vehicle-to-vehicle distance control mode adjusts the speed to maintain the distance, selected by driver, from a vehicle ahead. The adjusting speed range is up to the set speed.

If the vehicle ahead come to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges a standstill with a warning chime.

- When the vehicle traveling ahead has moved out from its lane of travel, the vehicle-to-vehicle distance control mode accelerates and maintains vehicle speed up to the set speed.

CAUTION:

If the vehicle ahead comes to stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill and sound a warning chime.

To prevent the vehicle from moving, the driver must depress the brake pedal.

NOTE:

- When the accelerator pedal is depressed, the brake operation and the warning are not performed by the ICC system.
- When the DCA system is ON and when the accelerator pedal is depressed, the DCA system is operated. Refer to [CCS-188. "System Description"](#).

OPERATION DESCRIPTION

Quickly push (less than 1.5 seconds) and release the MAIN switch ON.

The MAIN switch indicator, set distance indicator, own vehicle indicator, and set vehicle speed indicator come on and ICC system is set to a standby state.

ICC sensor integrated unit performs the control as per the following:

Constant speed	Comparing the set vehicle speed with the current vehicle speed, transmit the command to ECM via CAN communication to reach the set vehicle speed, and controls the electric throttle control actuator.
Deceleration	When a vehicle ahead (slower than driver set vehicle speed) appears or when a vehicle ahead slows down, the system controls the electric throttle control actuator into the close direction and decelerates the vehicle. If greater deceleration is necessary, the system transmits the brake fluid pressure command signal to the brake booster control unit via ITS communication and operates the brake.
Following	The system controls the electric throttle control actuator and the brake fluid pressure to keep the proper distance between the vehicles according to the vehicle speed change of the vehicle ahead.
Acceleration	When a vehicle ahead is not detected because of it changes lanes or own vehicle changes lanes during the following driving, the system controls the electric throttle control actuator in the open direction and accelerates the vehicle to the set vehicle speed slowly.

Set Condition

Under a standby state, pushing down the SET/COAST switch will start system control.

- When vehicle speed is between approximately 32 km/h and 144 km/h (20 MPH and 90 MPH).
- When vehicle speed is below approximately 32 km/h (20 MPH) if the vehicle ahead is detected. The set vehicle speed becomes 32 km/h (20 MPH).

If the system is canceled by conditions 1-6 below, the system will resume control at the last set cruising speed by pushing up the RESUME/ACCELERATE switch.

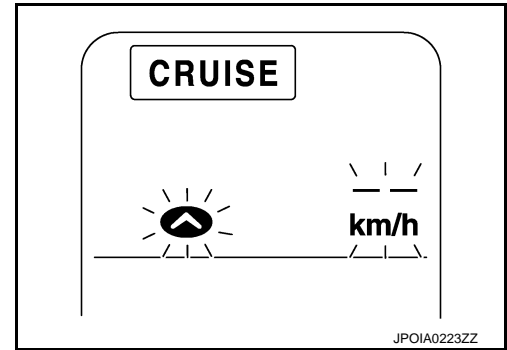
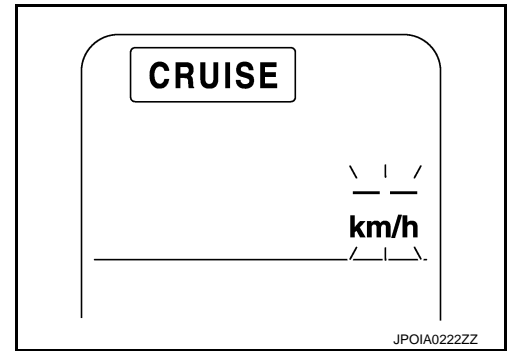
NOTE:

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

[ICC (FULL SPEED RANGE)]

< SYSTEM DESCRIPTION >

- When the SET/COAST switch is pushed under the following conditions, the system cannot be set and the set vehicle speed indicator will blink for approximately 2 seconds.
- When traveling below 32 km/h (20 MPH) and the vehicle ahead is not detected.
- When the selector lever is not in the “D”, “DS” position or manual mode.
- When the front wipers are operating at LO or HI.
(If the vehicle is equipped with a rain sensing auto-wiper, the system may cancel when the wipers are set to INT)
- When the parking brakes are applied.
- When the brakes are operated by the driver.
- When the SET/COAST switch is pushed under the following conditions, the system cannot be set. A warning chime will sound and the set speed indicator and own vehicle indicator will blink.
- When the snow mode switch is ON. (To use the ICC system, turn OFF the snow mode switch, push the MAIN switch to turn OFF the ICC system and reset the ICC system by pushing the MAIN switch again.)
- When the VDC is OFF. (To use the ICC system, turn ON the VDC system, push the MAIN switch to turn OFF the ICC system and reset the ICC system by pushing the MAIN switch again.)
- When ABS or VDC (including the TCS) operates.
- When driving into a strong light (i.e., sunlight).
- When the wheel is slipping. (To use the ICC system, make sure the wheels are no longer spinning, push the MAIN switch to turn OFF the ICC system and reset the ICC system by pushing the MAIN switch again.)



Cancel Conditions

1. When CANCEL switch is pressed.
2. When brake pedal is depressed.
3. When the vehicle ahead is not detected below the speed of 24 km/h (15 MPH).
4. When the selector lever is not in the “D”, “DS” position or manual mode.
5. When the parking brakes are applied.
6. When the system judges the vehicle is at standstill.
7. When the front wipers are operating at LO or HI.
(If the vehicle is equipped with a rain sensing auto-wiper, the system may cancel when the wipers are set to INT)
8. When the snow mode switch is turned ON.
9. When ABS or VDC (including the TCS) operates.
10. When the MAIN switch is turned OFF.
11. When a wheel slips.
12. When driving into a strong light (i.e., sunlight).
13. When the VDC is turned OFF.
14. When the system malfunction occurs.

OPERATION AND DISPLAY

ICC Steering Switch

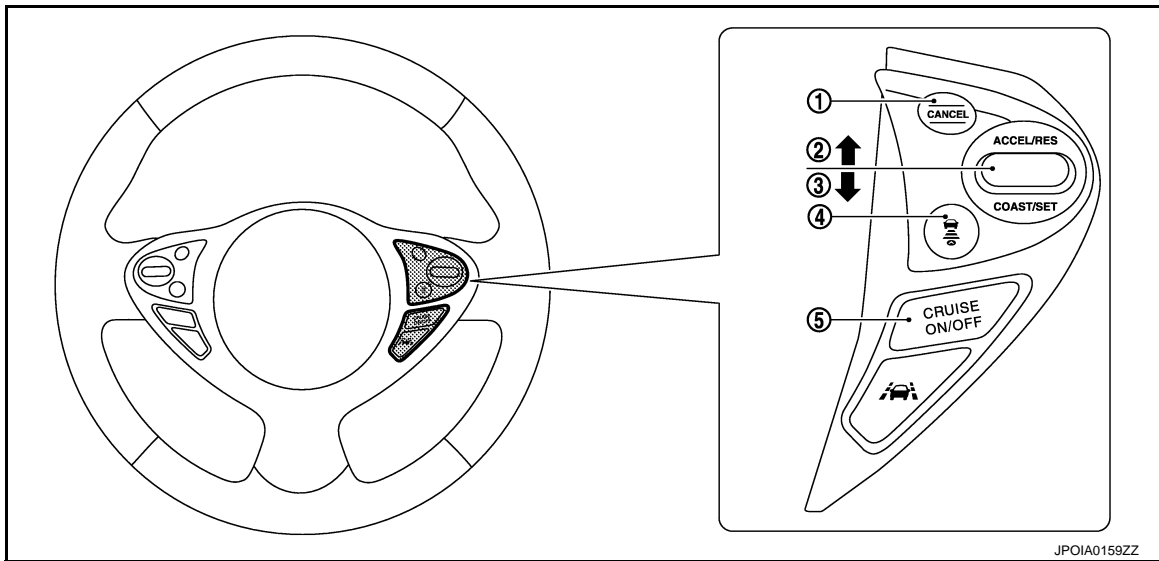
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VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

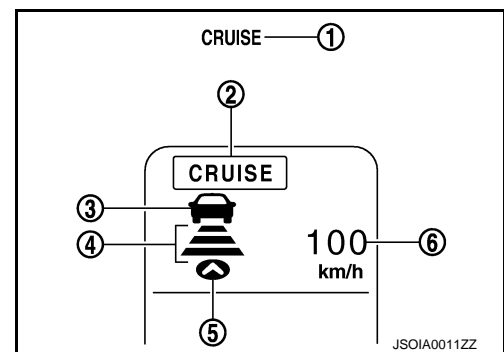
[ICC (FULL SPEED RANGE)]



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|--------------------|-----------------------------|---------------------|
| 1. CANCEL switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. DISTANCE switch | 5. MAIN switch | |

No.	Switch name	Description
1	CANCEL switch	Deactivates the system without erasing the set speed.
2	RESUME/ACCELERATE switch	Resumes set speed or increases speed incrementally. <ul style="list-style-type: none"> Push and hold the switch to increase the set speed by 5 km/h (5 MPH). Push then quickly release the switch to increase the set speed by 1 km/h (1 MPH).
3	SET/COAST switch	Sets desired cruise speed or reduces speed incrementally. <ul style="list-style-type: none"> Push and hold the switch to decrease the set speed by 5 km/h (5 MPH). Push then quickly release the switch to decrease the set speed by 1 km/h (1 MPH). NOTE: The minimum set speed is 32 km/h (20 MPH).
4	DISTANCE switch	Changes the following distance from: Long, Middle, Short.
5	MAIN switch	Master switch to activate the system (Press for less than 1.5 seconds).

ICC System Display (On The Information Display)



No.	Display item	Description
1	ICC system warning lamp	Indicates that a malfunction occurs in the ICC system.
2	MAIN switch indicator	Indicates that the MAIN switch is ON (ICC system ON).
3	Vehicle ahead detection indicator	Indicates whether it detects a vehicle ahead.
4	Set distance indicator	Indicates the selected distance between vehicles set with the DISTANCE switch.
5	Own vehicle indicator	Indicates the own vehicle.
6	Set vehicle speed indicator	<ul style="list-style-type: none"> Indicates the set vehicle speed. Indicates 32 km/h (20 MPH) when setting less than 32 km/h (20 MPH).

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

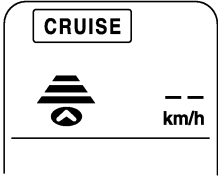
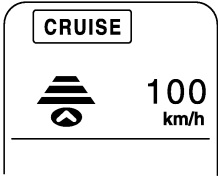
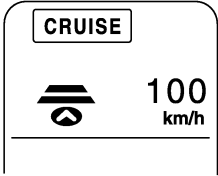
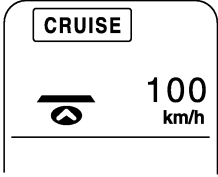
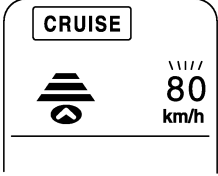
< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

System Control Condition Display

Quickly push (less than 1.5 seconds) and release the MAIN switch ON.

The MAIN switch indicator (cruise indicator), set distance indicator, own vehicle indicator, and set vehicle speed indicator come on and ICC system is set to a standby state.

Condition		Display on ICC system display	
Standby mode		 <p>JPOIA0141ZZ</p>	
Control mode	Without a vehicle ahead	Set vehicle distance (Long)	 <p>JPOIA0142ZZ</p>
		Set vehicle distance (Middle)	 <p>JPOIA0143ZZ</p>
		Set vehicle distance (Short)	 <p>JPOIA0144ZZ</p>
		When the vehicle speed exceeds the set speed	 <p>JPOIA0145ZZ</p>

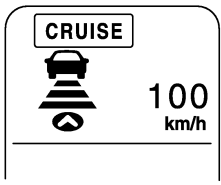
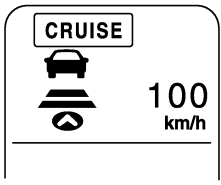
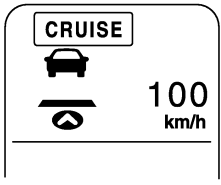
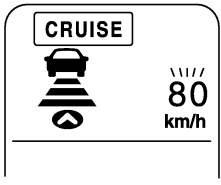
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VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

		Condition	Display on ICC system display
Control mode	With a vehicle ahead	Set vehicle distance (Long)	 <small>JPOIA0146ZZ</small>
		Set vehicle distance (Middle)	 <small>JPOIA0147ZZ</small>
		Set vehicle distance (Short)	 <small>JPOIA0148ZZ</small>
		When the vehicle speed exceeds the set speed	 <small>JPOIA0149ZZ</small>

NOTE:

The display of the DCA system is given priority when the DCA system is ON in a standby mode. (The set vehicle speed indicator, set distance indicator, and own vehicle indicator are not displayed). Refer to [CCS-188, "System Description"](#).

Approach Warning Display

If own vehicle comes closer to a vehicle ahead due to rapid deceleration of that vehicle or if another vehicle cuts in, the system warns the driver with the chime and ICC system display. Decelerate by depressing the brake pedal to maintain a safe vehicle distance if:

- The chime sounds.
- The vehicle ahead detection indicator and set distance indicator blink.

The warning chime may not sound in some cases when there is a short distance between vehicles. Some examples are:

- When the vehicles are traveling at the same speed and the distance between vehicles is not changing.
- When the vehicle ahead is traveling faster and the distance between vehicles is increasing.
- When a vehicle cuts in at near own vehicle.

The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.

The warning chime will not sound when the accelerator pedal is depressed, overriding the system.

The approach warning chime may sound and the system display may blink when the ICC sensor detects some reflectors which are fitted on vehicles in other lanes or on the side of the road.

This may cause the ICC system to decelerate or accelerate the vehicle.

The ICC sensor may detect these reflectors when the vehicle is driven on winding roads, hilly roads or when entering or exiting a curve.

The ICC sensor may also detect reflectors on narrow roads or in road construction zones.

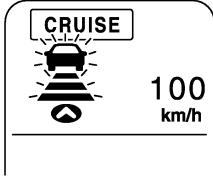
In these cases driver will have to manually control the proper distance ahead of own vehicle.

Also, the sensor sensitivity can be affected by vehicle operation (steering maneuver or driving position in the lane) or traffic or vehicle condition (for example, if a vehicle is being driven with some damage).

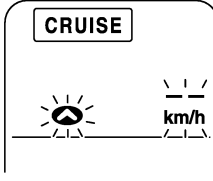
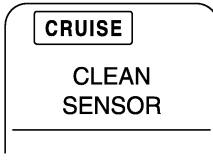
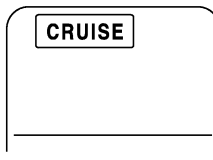
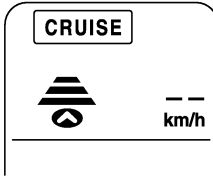
VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

Condition	Display on ICC system display
<p>When own vehicle comes closer to the vehicle ahead and it is judged that the distance between the vehicles is not sufficient</p>	 <p style="text-align: right; font-size: small;">JPOIA0150ZZ</p>

Warning Lamp and Automatic Cancellation Display

	Condition	Description	Display on ICC system display
Warning display	<ul style="list-style-type: none"> When the VDC is turned OFF When the VDC or ABS (including the TCS) operates When a wheel slips When the snow mode switch is turned ON When driving into a strong light (i.e., sunlight) 	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE: When the conditions listed above are no longer present, turn the system OFF using the MAIN switch. Turn the ICC system back on to use the system.</p>	 <p style="text-align: right; font-size: small;">JPOIA0151ZZ</p>
	<p>When the sensor window is dirty, making it impossible to detect a vehicle ahead.</p>	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE: Park the vehicle in a safe place, turn the engine OFF. Clean the sensor window with a soft cloth and then perform the settings again.</p>	 <p style="text-align: right; font-size: small;">JPOIA0152ZZ</p>
	<p>When the ICC system is malfunctioning</p>	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE: Turn the engine OFF and restart engine. If there is no malfunction, it is possible to set the system.</p>	 <p style="text-align: right; font-size: small;">JPOIA0153ZZ</p>
Automatic cancellation display	<ul style="list-style-type: none"> When brake pedal is depressed When CANCEL switch is pressed When a vehicle ahead is not detected below the speed of 24 km/h (15 MPH) When the system judges the vehicle is at standstill When the selector lever is not in "D", "DS" position or manual mode When the front wipers are operating at LO or HI (If the vehicle is equipped with a rain sensing auto-wiper, the system may cancel when the wipers are set to INT) When the parking brake are applied 	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE:</p> <ul style="list-style-type: none"> The system will be in a standby, after the control is automatically canceled. A chime sounds when the control is automatically canceled, except when brake pedal is depressed or when CANCEL switch is pressed. 	 <p style="text-align: right; font-size: small;">JPOIA0154ZZ</p>

NOTE:

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VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

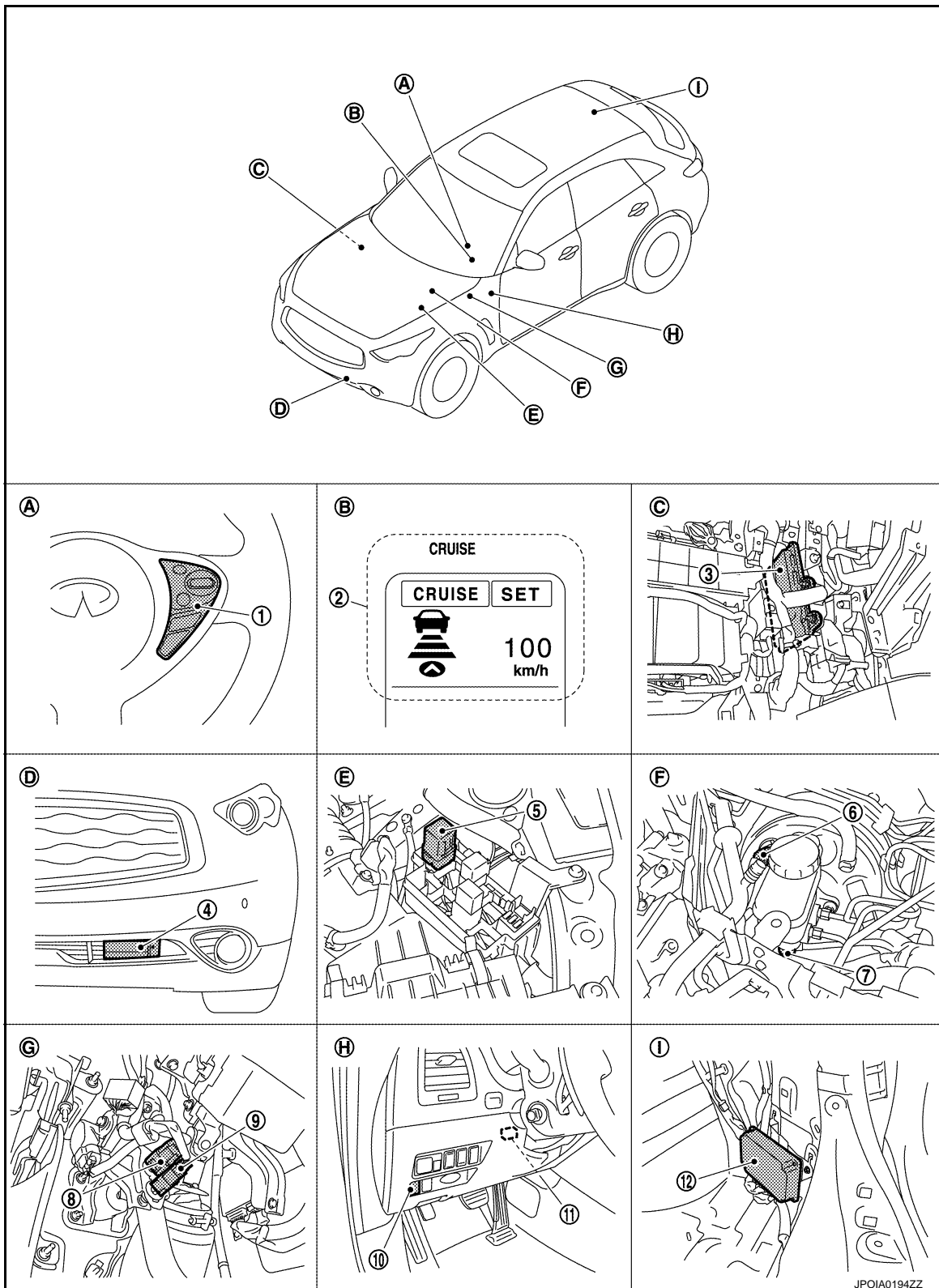
[ICC (FULL SPEED RANGE)]

< SYSTEM DESCRIPTION >

When the ICC system is automatically canceled, the cancellation condition can be displayed on "WORK SUPPORT" of CONSULT-III (ICC).

Component Parts Location

INFOID:000000003902183



1. ICC steering switch

2. Information display, ICC system warning lamp

3. ECM

4. ICC sensor integrated unit

5. ICC brake hold relay

6. Booster solenoid/Release switch

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

- | | | |
|------------------------------|---------------------------------------|---------------------------------------|
| 7. Brake pressure sensor | 8. Stop lamp switch | 9. ICC brake switch |
| 10. IBA OFF switch | 11. ICC warning chime | 12. Brake booster control unit |
| A. Steering wheel (RH) | B. On the combination meter | C. Behind the glove box |
| D. Front bumper (LH) | E. Engine room (LH) | F. Inside brake master cylinder cover |
| G. Upper side of brake pedal | H. Instrument driver lower panel (LH) | I. Luggage room (RH) |

Component Description

INFOID:000000003902184

×: Applicable

Component	Function Description			Description
	*1	*2	*3	
ICC sensor integrated unit	×	×	×	Refer to CCS-52, "Description" .
ECM	×	×	×	Refer to CCS-87, "Description" .
ABS actuator and electric unit (control unit)	×	×	×	Refer to CCS-58, "Description" .
BCM	×			Transmits the front wiper request signal to ICC sensor integrated unit via CAN communication.
TCM	×	×		Refer to CCS-129, "Description" .
Unified meter and A/C amp.	×	×	×	Receives the meter display signal, ICC warning lamp signal, and IBA OFF indicator lamp signal from ICC sensor integrated unit via CAN communication and transmits them to the combination meter via the communication line.
Combination meter	×	×	×	Performs the following operations using the signals received from the unified meter and A/C amp. via the communication line. <ul style="list-style-type: none"> Displays the ICC system operation status using the meter display signal. Illuminates the ICC system warning lamp using the ICC warning lamp signal. Illuminates the IBA OFF indicator lamp using the IBA OFF indicator lamp signal.
ICC brake switch	×	×	×	Refer to CCS-60, "Description" .
Stop lamp switch	×	×	×	
ICC brake hold relay	×		×	Refer to CCS-80, "Description" .
Brake booster control unit	×	×	×	Refer to CCS-98, "Description" .
Brake booster	×		×	Refer to CCS-98, "Description" .
Brake pressure sensor	×		×	Refer to CCS-68, "Description" .
Booster solenoid/Release switch	×		×	<ul style="list-style-type: none"> Refer to CCS-70, "Description" for booster solenoid. Refer to CCS-73, "Description" for release switch.
ICC warning chime	×	×	×	Refer to CCS-142, "Description" .
Steering angle sensor	×			Refer to CCS-123, "Description" .
IBA OFF switch			× ^{NOTE}	Refer to CCS-117, "Description" .

*1: Vehicle-to-vehicle distance control mode

*2: Conventional (fixed speed) cruise control mode

*3: IBA system and Brake Assist (With Preview Function)

NOTE:

Only IBA system uses

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CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

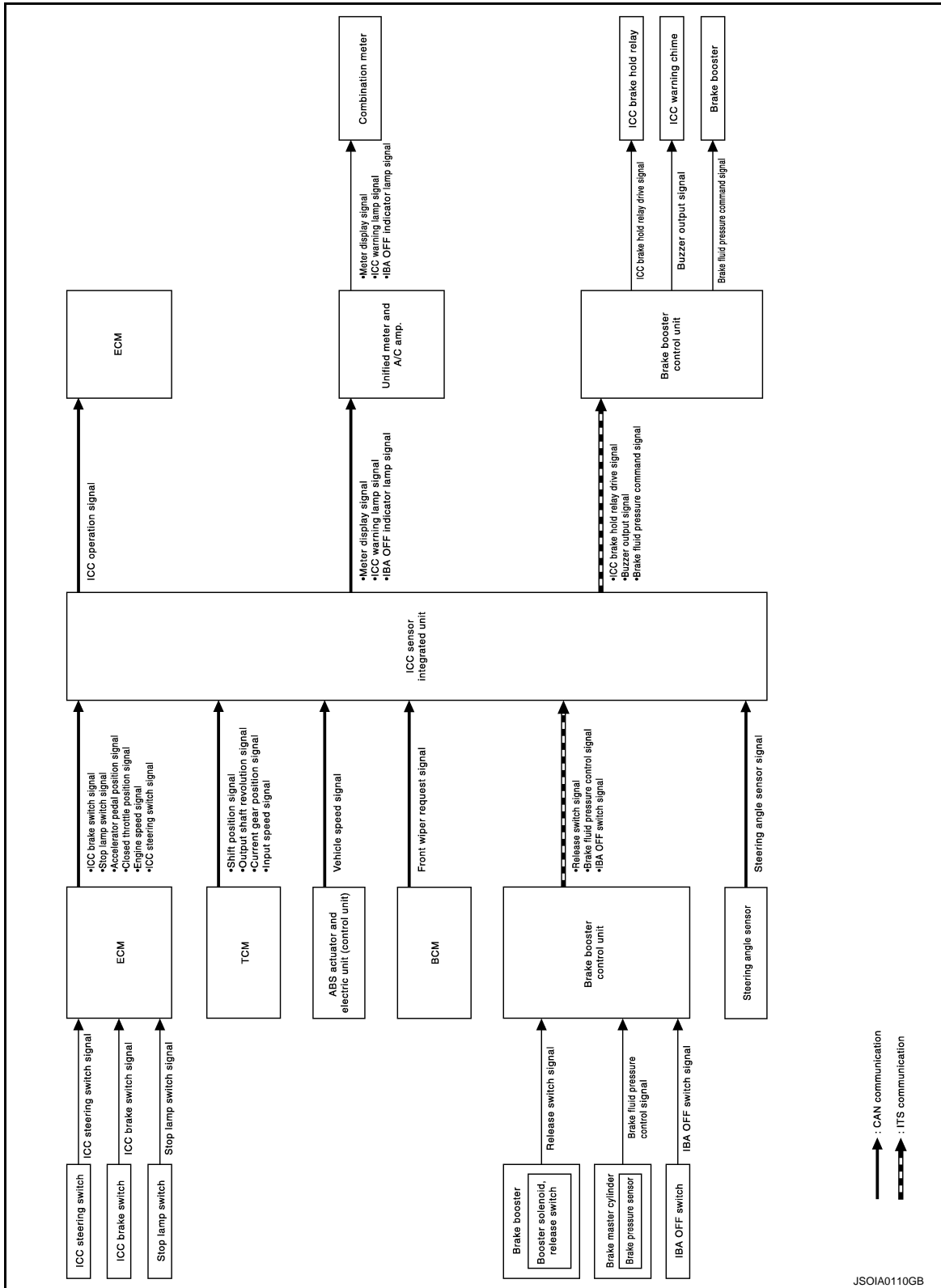
< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

System Diagram

INFOID:000000003902185



System Description

INFOID:000000003902186

FUNCTION DESCRIPTION

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

This mode allows driving at a speed between 40 to 144 km/h (25 to 90 MPH) without keeping foot on the accelerator pedal.

NOTE:

In the conventional (fixed speed) cruise control mode, a warning chime does not sound to warn driver if own vehicle are too close to the vehicle ahead, as neither the presence of the vehicle ahead nor the vehicle-to-vehicle distance is detected.

OPERATION DESCRIPTION

To turn ON the conventional (fixed speed) cruise control mode, push and hold the MAIN switch for longer than approximately 1.5 seconds when ICC system is OFF.

When pushing the MAIN switch ON, the ICC system display and the MAIN switch indicator are displayed on the information display.

After hold the MAIN switch ON for longer than approximately 1.5 seconds, the ICC system display goes out.

The MAIN switch indicator stays lit and brings the system to standby state.

NOTE:

- To turn on the vehicle-to-vehicle distance control mode again, turn OFF the system and quickly push (less than 1.5 seconds) the MAIN switch.
- When the DCA system is ON, the conventional (fixed speed) cruise control mode cannot be turned on even though the MAIN switch is pushed and held.
- To turn ON the conventional (fixed speed) cruise control mode, turn OFF the DCA system. Refer to [CCS-188. "System Description"](#).

ICC sensor integrated unit performs the control as per the following:

Constant speed	Comparing the set vehicle speed with the current vehicle speed, transmits the command to ECM via CAN communication to reach the set vehicle speed, and controls the electronic throttle control actuator.
----------------	---

Set Condition

When the system is under a standby state and the vehicle speed is between approximately 40 km/h (25 MPH) and 144 km/h (90 MPH), pushing the SET/COAST switch will start system control.

If the system is canceled by conditions 1-6 below, the system will resume control at the last set cruising speed by pushing the RESUME/ACCELERATE switch.

Cancel conditions

1. When CANCEL switch is pressed.
2. When brake pedal depressed.
3. When the vehicle speed falls below approximately 32 km/h (20 MPH).
4. When the vehicle slows down more than 13 km/h (8 MPH) below the set speed.
5. When the selector lever is not in the "D", "DS" position or manual mode.
6. When the parking brakes are applied.
7. When the MAIN switch is turned OFF.
8. When VDC (including the TCS) operates.
9. When a wheel slips.
10. When the system malfunction occurs.

OPERATION AND DISPLAY

ICC Steering Switch

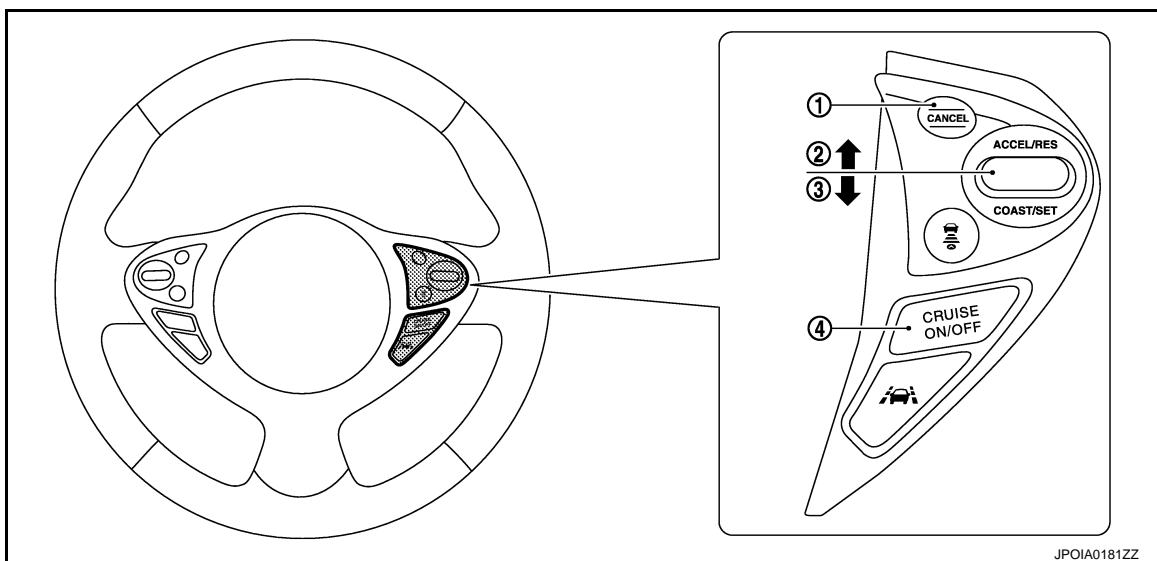
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CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

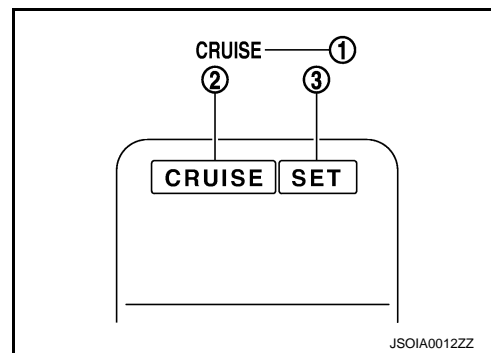
[ICC (FULL SPEED RANGE)]



1. CANCEL switch
2. RESUME/ACCELERATE switch
3. SET/COAST switch
4. MAIN switch

No.	Description	Function
1	CANCEL switch	Deactivates system without erasing set speed.
2	RESUME/ACCELERATE switch	Resumes set speed or increases speed incrementally.
3	SET/COAST switch	Sets desired cruise speed or reduces speed incrementally.
4	MAIN switch	Master switch to activate the system (Press for more than 1.5 seconds).

ICC System Display (On The Information Display)



No.	Description	Function
1	ICC system warning lamp	Indicates that a malfunction occurs in the ICC system.
2	MAIN switch indicator	Indicates that the MAIN switch is ON (ICC system ON).
3	SET switch indicator	Indicates that the set conventional (fixed speed) cruise control mode is controlled.

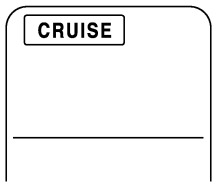
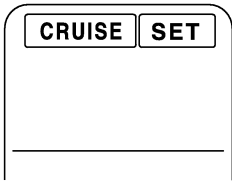
System Control Condition Display

Push and hold the MAIN switch for longer than approximately 1.5 seconds. This mode will be in a standby state for setting.

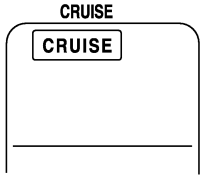
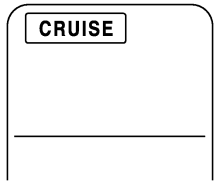
CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

Condition	Display on ICC system display
Standby mode	 <p>JPOIA0158ZZ</p>
Control mode	 <p>JPOIA0156ZZ</p>

Warning and Automatic Cancellation Display

Condition	Description	Display on ICC system display
Warning display	<p>When the ICC system is malfunctioning</p>	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE: Turn the engine OFF and restart engine. If there is no malfunction, it is possible to set the system.</p>  <p>JPOIA0157ZZ</p>
System cancel display	<ul style="list-style-type: none"> When brake pedal is depressed When pressing CANCEL switch When the vehicle speed falls below approximately 32 km/h (20 MPH) When the vehicle slows down more than 13 km/h (8 MPH) below the set speed When the selector lever is not in the "D", "DS" position or manual mode When the parking brakes are applied When VDC (including the TCS) operates When a wheel slips 	<p>A chime sounds and the control is automatically canceled.</p> <p>NOTE:</p> <ul style="list-style-type: none"> The system will be in a standby, after the control is automatically canceled. A chime sounds when the control is automatically canceled, except when brake pedal is depressed or when CANCEL switch is pressed.  <p>JPOIA0158ZZ</p>

NOTE:

When the ICC system is automatically canceled, the cancellation condition can be displayed on "WORK SUPPORT" of CONSULT-III (ICC).

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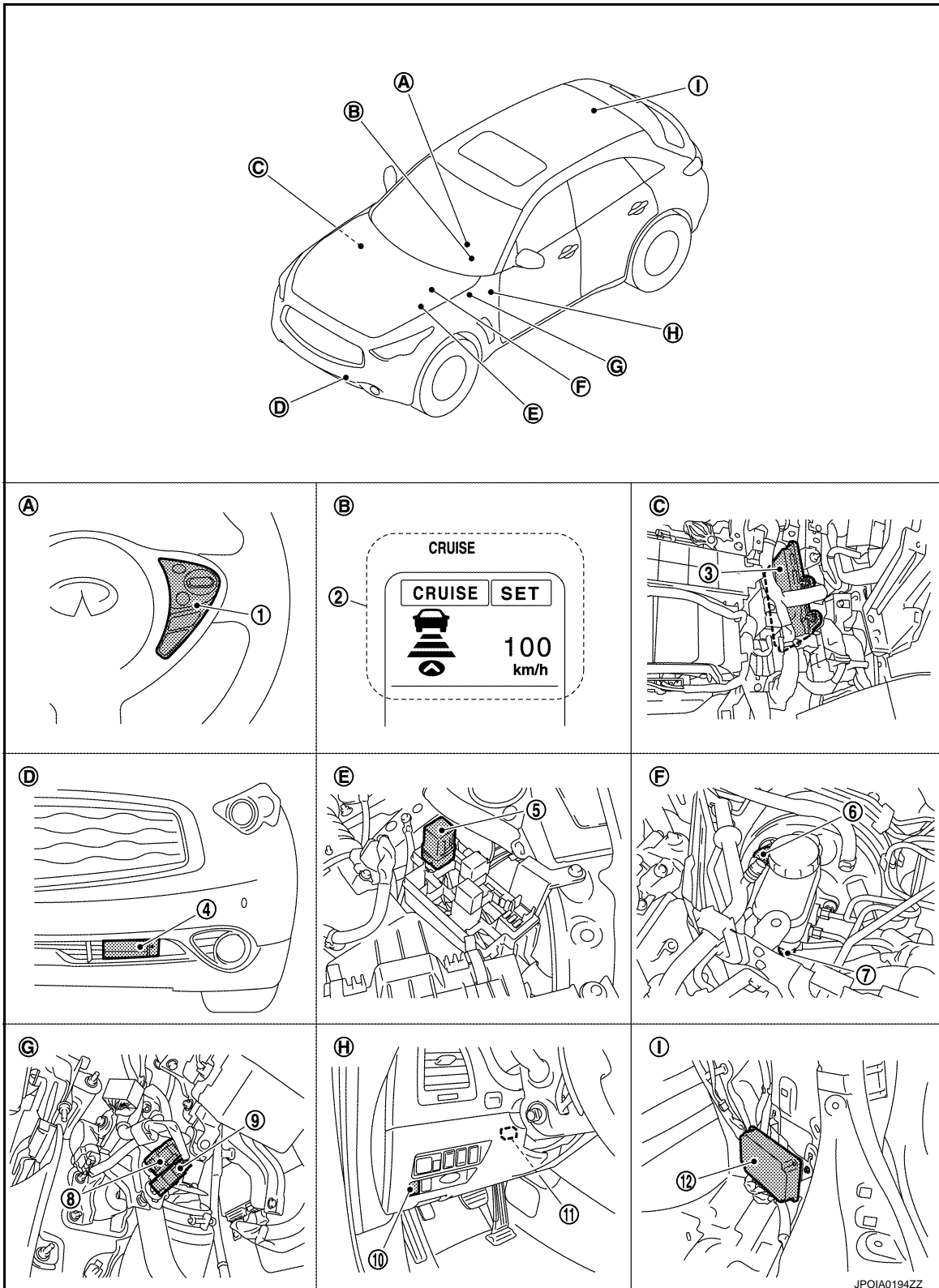
CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

Component Parts Location

INFOID:000000003902187



- | | | |
|-------------------------------|---|------------------------------------|
| 1. ICC steering switch | 2. Information display, ICC system warning lamp | 3. ECM |
| 4. ICC sensor integrated unit | 5. ICC brake hold relay | 6. Booster solenoid/Release switch |
| 7. Brake pressure sensor | 8. Stop lamp switch | 9. ICC brake switch |
| 10. IBA OFF switch | 11. ICC warning chime | 12. Brake booster control unit |

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE FUNCTION

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

- | | | |
|------------------------------|---------------------------------------|---------------------------------------|
| A. Steering wheel (RH) | B. On the combination meter | C. Behind the glove box |
| D. Front bumper (LH) | E. Engine room (LH) | F. Inside brake master cylinder cover |
| G. Upper side of brake pedal | H. Instrument driver lower panel (LH) | I. Luggage room (RH) |

Component Description

INFOID:000000003902188

×: Applicable

Component	Function Description			Description
	*1	*2	*3	
ICC sensor integrated unit	×	×	×	Refer to CCS-52, "Description" .
ECM	×	×	×	Refer to CCS-87, "Description" .
ABS actuator and electric unit (control unit)	×	×	×	Refer to CCS-58, "Description" .
BCM	×			Transmits the front wiper request signal to ICC sensor integrated unit via CAN communication.
TCM	×	×		Refer to CCS-129, "Description" .
Unified meter and A/C amp.	×	×	×	Receives the meter display signal, ICC warning lamp signal, and IBA OFF indicator lamp signal from ICC sensor integrated unit via CAN communication and transmits them to the combination meter via the communication line.
Combination meter	×	×	×	Performs the following operations using the signals received from the unified meter and A/C amp. via the communication line. <ul style="list-style-type: none"> Displays the ICC system operation status using the meter display signal. Illuminates the ICC system warning lamp using the ICC warning lamp signal. Illuminates the IBA OFF indicator lamp using the IBA OFF indicator lamp signal.
ICC brake switch	×	×	×	Refer to CCS-60, "Description" .
Stop lamp switch	×	×	×	
ICC brake hold relay	×		×	Refer to CCS-80, "Description" .
Brake booster control unit	×	×	×	Refer to CCS-98, "Description" .
Brake booster	×		×	Refer to CCS-98, "Description" .
Brake pressure sensor	×		×	Refer to CCS-68, "Description" .
Booster solenoid/Release switch	×		×	<ul style="list-style-type: none"> Refer to CCS-70, "Description" for booster solenoid. Refer to CCS-73, "Description" for release switch.
ICC warning chime	×	×	×	Refer to CCS-142, "Description" .
Steering angle sensor	×			Refer to CCS-123, "Description" .
IBA OFF switch			× ^{NOTE}	Refer to CCS-117, "Description" .

*1: Vehicle-to-vehicle distance control mode

*2: Conventional (fixed speed) cruise control mode

*3: IBA system and Brake Assist (With Preview Function)

NOTE:

Only IBA system uses

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DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

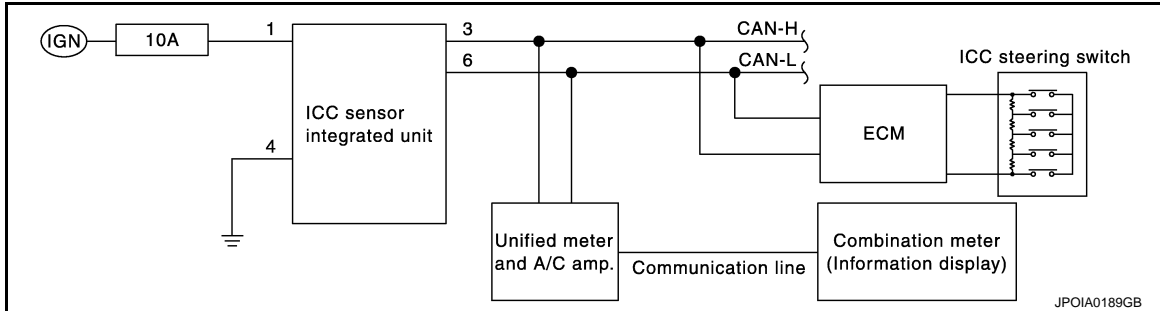
DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

Diagnosis Description

INFOID:000000003902190

The DTC is displayed on the information display by operating the ICC steering switch.

ON BOARD SELF-DIAGNOSIS SYSTEM DIAGRAM



ON BOARD SELF-DIAGNOSIS OPERATION PROCEDURE

CAUTION:

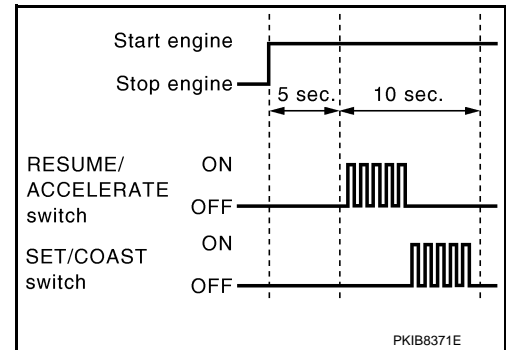
Start condition of on board self-diagnosis

- MAIN switch OFF
- DCA switch OFF
- Vehicle speed 0 km/h (0 MPH)

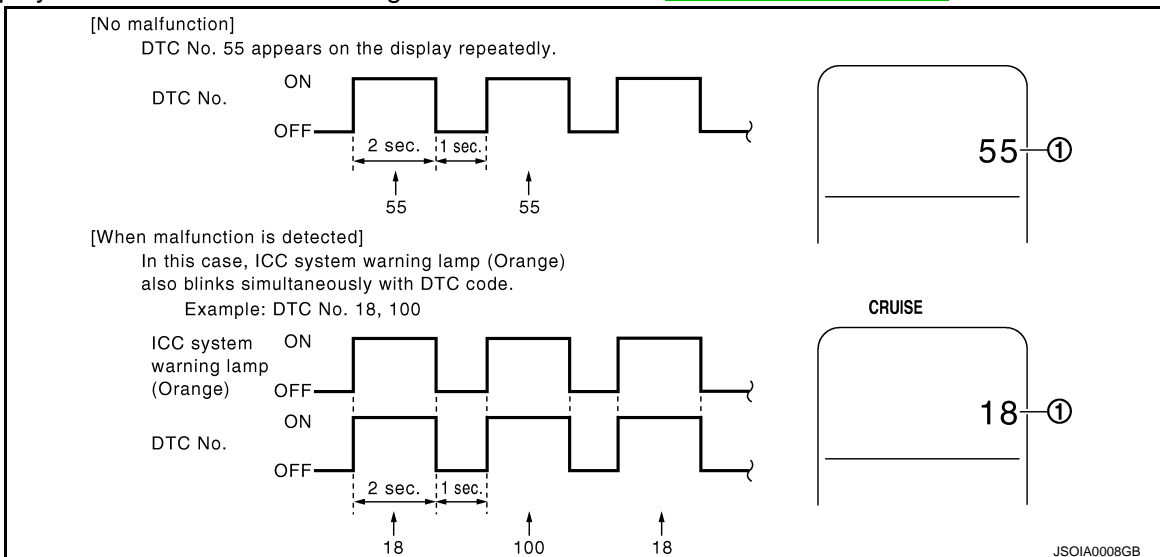
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [CCS-158, "DTC Index"](#).



NOTE:

- It displays for up to 5 minutes and then stops.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

[ICC (FULL SPEED RANGE)]

< SYSTEM DESCRIPTION >

- If multiple malfunctions exist, up to 3 DTCs can be stored in memory at the most, and the most recent one is displayed first.

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

Assumed abnormal part		Inspection item
ICC system display	Combination meter malfunction	Check that the self-diagnosis function of the combination meter operates. Refer to MWI-43, "Diagnosis Description" .
	Unified meter and A/C amp. malfunction	Check power supply and ground circuit of unified meter and A/C amp. Refer to MWI-58, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure" .
	Communication error of the combination meter and the unified meter and A/C amp.	Start the self-diagnosis of the unified meter and A/C amp. and then check the self-diagnosis results. Refer to MWI-112, "DTC Index" .
ICC steering switch malfunction	Perform the inspection for DTC "C1A06". Refer to CCS-65, "Diagnosis Procedure" .	
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ICC sensor integrated unit malfunction		<ul style="list-style-type: none"> Check power supply and ground circuit of ICC sensor integrated unit. Refer to CCS-140, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure". Perform SELF-DIAGNOSIS for "ICC" with CONSULT-III, and then check the malfunctioning parts. Refer to CCS-158, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

- Turn the ignition switch OFF.
- Start the engine, and then start the on board self-diagnosis.
- Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

NOTE:

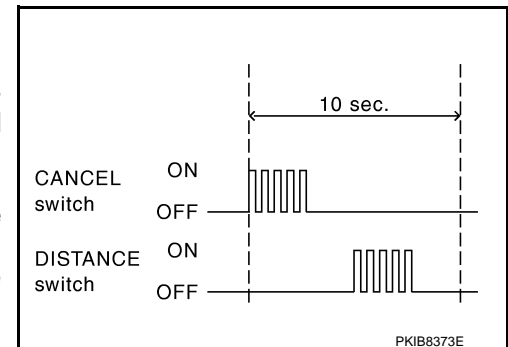
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

- DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

- Turn ignition switch OFF, and finish the diagnosis.



CONSULT-III Function (ICC)

INFOID:000000003902191

DESCRIPTION

CONSULT-III performs the following functions via CAN communication using ICC sensor integrated unit.

Diagnosis mode	Description
Work Support	<ul style="list-style-type: none"> It can monitor the adjustment direction indication in order to perform the laser beam aiming operation smoothly. Displays causes of automatic cancellation of the ICC system.
Self Diagnostic Result	Displays malfunctioning system memorized in ICC sensor integrated unit.
Data Monitor	Displays real-time input/output data of ICC sensor integrated unit.
Active Test	Enables operation check of electrical loads by transmitting driving signal to them.

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DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

Diagnosis mode	Description
Ecu Identification	<ul style="list-style-type: none"> • Displays ICC sensor integrated unit part number. • Displays brake booster control unit part number. • Displays accelerator pedal assembly part number.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

WORK SUPPORT

Work support items	Description
CAUSE OF AUTO-CANCEL	Displays causes of automatic cancellation of the ICC system.
LASER BEAM ADJUST	Outputs laser beam, calculates dislocation of the beam, and indicates adjustment direction.

Display Items For The Cause Of Automatic Cancellation

NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

×: Applicable

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	DCA system	Description
OPERATING WIPER	×			The wiper operates at HI or LO (it includes when the wiper is operated at LO or HI with the wiper switch INT position)
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range.
LASER SUNBEAM	×		×	Intense light such as sunlight entered ICC sensor integrated unit light sensing part
LASER TEMP	×		×	Temperature around ICC sensor integrated unit became low
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
SNOW MODE SW	×		×	Snow mode switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from A/T vehicle speed
TIRE SLIP	×	×		Wheel slipped
IGN LOW VOLT	×	×	×	Power supply voltage became low
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 32 km/h (20 MPH)
CAN COMM ERROR	×	×	×	ICC sensor integrated unit received an abnormal signal with CAN communication
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system
BCU CIRCUIT	×	×	×	The brake booster control unit is malfunctioning

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously
PARKING BRAKE ON	×	×		The parking brake is operating
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high
NO RECORD	×	×	×	-

Laser Beam Adjust

Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

SELF DIAGNOSTIC RESULT

Refer to [CCS-158, "DTC Index"](#).

DATA MONITOR

×: Applicable

Monitored item [Unit]	MAIN SIGNAL	Description
MAIN SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
SET/COAST SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CANCEL SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
RESUME/ACC SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
DISTANCE SW [On/Off]		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CRUISE OPE [On/Off]	×	Indicates whether controlling or not (ON means "controlling").
BRAKE SW [On/Off]	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication).
STOP LAMP SW [On/Off]	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication).
IDLE SW [On/Off]		Indicates [On/Off] status of idle switch read from ICC sensor integrated unit through CAN communication (ECM transmits On/Off status through CAN communication).
SET DISTANCE [Short/Mid/Long]	×	Indicates set distance memorized in ICC sensor integrated unit.
CRUISE LAMP [On/Off]	×	Indicates [On/Off] status of MAIN switch indicator output.
OWN VHCL [On/Off]		Indicates [On/Off] status of own vehicle indicator output.
VHCL AHEAD [On/Off]		Indicates [On/Off] status of vehicle ahead detection indicator output.
ICC WARNING [On/Off]		Indicates [On/Off] status of ICC system warning lamp output.
BA WARNING [On/Off]		Indicates [On/Off] status of IBA OFF indicator lamp output.
VHCL SPEED SE [km/h] or [mph]	×	Indicates vehicle speed calculated from ICC sensor integrated unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication].
SET VHCL SPD [km/h] or [mph]	×	Indicates set vehicle speed memorized in ICC sensor integrated unit.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

Monitored item [Unit]	MAIN SIGNAL	Description
BUZZER O/P [On/Off]		Indicates [On/Off] status of ICC warning chime output.
THRTL SENSOR [deg]	×	NOTE: The item is displayed, but it is not monitored.
ENGINE RPM [rpm]		Indicates engine speed read from ICC sensor integrated unit through CAN communication (ECM transmits engine speed through CAN communication).
WIPER SW [Off/Low/High]		Indicates wiper [Off/Low/High] status (BCM transmits front wiper request signal through CAN communication).
YAW RATE [deg/s]		NOTE: The item is displayed, but it is not monitored.
RELEASE SW NO [On/Off]		Indicates [On/Off] status as judged from release switch signal. ON: When brake pedal is depressed. OFF: When brake pedal is not depressed.
RELEASE SW NC [On/Off]		Indicates [On/Off] status as judged from release switch signal. ON: When brake pedal is not depressed. OFF: When brake pedal is depressed.
STP LMP DRIVE [On/Off]	×	Indicates [On/Off] status of ICC brake hold relay drive output.
PRESS SENS [bar]	×	Indicates brake fluid pressure value calculated from signal voltage of brake pressure sensor.
D RANGE SW [On/Off]		Indicates [On/Off] status of "D" or "DS" or "M" positions read from ICC sensor integrated unit through CAN communication; ON when position "D" or "DS" or "M" (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]		Indicates shift position signal read from ICC sensor integrated unit through CAN communication (TCM transmits shift position signal through CAN communication).
PWR SUP MONI [V]	×	Indicates IGN voltage input by ICC sensor integrated unit.
VHCL SPD AT [km/h] or [mph]		Indicates vehicle speed calculated from A/T vehicle speed sensor read from ICC sensor integrated unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication).
THRTL OPENING [%]	×	Indicates throttle position read from ICC sensor integrated unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]		Indicates A/T gear position read from ICC sensor integrated unit through CAN communication (TCM transmits current gear position signal through CAN communication).
CLUTCH SW SIG [On/Off]	×	NOTE: The item is displayed, but it is not monitored.
NP SW SIG [On/Off]	×	NOTE: The item is displayed, but it is not used.
PKB SW [On/Off]		Parking brake switch status [On/Off] judged from the parking brake switch signal that ICC sensor integrated unit readout via CAN communication is displayed (Unified meter and A/C amp. transmits the parking brake switch signal via CAN communication)
MODE SIG [Off, ICC, ASCD]		Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode].
SET DISP IND [On/Off]		Indicates [On/Off] status of SET switch indicator output.
DISTANCE [m]		Indicates the distance from the vehicle ahead.
RELATIVE SPD [m/s]		Indicates the relative speed of the vehicle ahead.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

Monitored item [Unit]	MAIN SIGNAL	Description
DCA ON SW [On/Off]	×	Status [On/Off] judged from DCA switch signal that ICC sensor integrated unit readout via ITS communication is displayed (Brake booster control unit transmits the DCA switch signal via ITS communication).
DCA ON IND [On/Off]		The status [On/Off] of DCA system switch indicator output is displayed.
DCA VHL AHED [On/Off]		The status [On/Off] of vehicle ahead detection indicator output in DCA system is displayed.
APA TEMP [°C]		The accelerator pedal actuator integrated motor temperature that the ICC sensor integrated unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication).
APA PWR [V]		Accelerator pedal actuator power supply voltage that the ICC sensor integrated unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication).
IBA SW [On/Off]		Status [On/Off] judged from IBA OFF switch signal that ICC sensor integrated unit readout via ITS communication is displayed (Brake booster control unit transmits the IBA OFF switch signal via ITS communication).

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the ICC system warning lamp is illuminated.**
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
METER LAMP	The ICC system warning lamp, MAIN switch indicator, SET switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary.
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary.
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated.
BOOSTER SOL/V	The booster solenoid can be operated as necessary, and the brake can be operated.
ICC BUZZER	The ICC warning chime can sound by ON/OFF operations as necessary.
ACCELERATOR PEDAL ACTUATOR	The accelerator pedal actuator can be operated as necessary.

METER LAMP

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	Signal
METER LAMP	Off	Stops transmitting the signals below to end the test. <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	OFF
	On	Transmits the following signals to the unified meter and A/C amp. via CAN communication. <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	ON

DCA INDICATOR

NOTE:

The test can be performed only when the engine is running.



DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

Test item	Operation	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test.	OFF
	On	Transmits the DCA system switch indicator signal to the unified meter and A/C amp. via CAN communication.	ON

STOP LAMP

Test item	Operation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal below to end the test.	OFF
	On	Transmits the ICC brake hold relay drive signal to the brake booster control unit via ITS communication.	ON

BOOSTER SOL/V

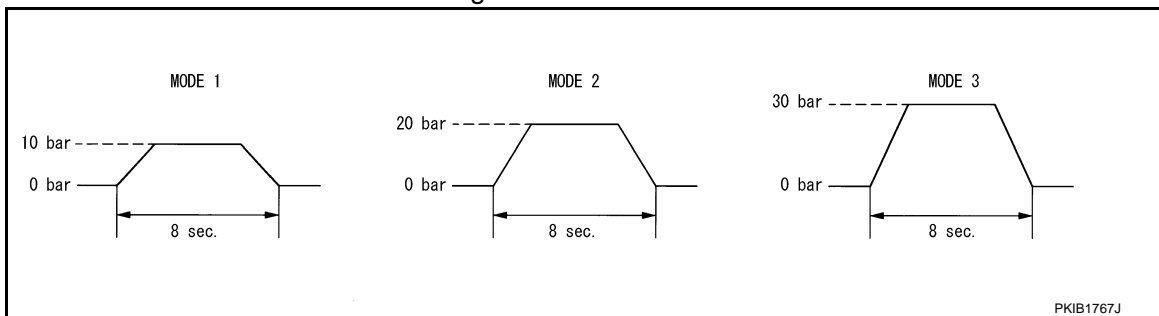
NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	"PRESS SENS" value
BOOSTER SOL/V	MODE1	Transmits the brake fluid pressure command signal to the brake booster control unit via ITS communication.	10 bar
	MODE2		20 bar
	MODE3		30 bar
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3".	—
	Reset	Stops transmitting the brake fluid pressure command signal below to end the test.	—
	End	Returns to the "SELECT TEST ITEM" screen.	—

NOTE:

The test is finished in 10 seconds after starting.



ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signal to the brake booster control unit via ITS communication.	Intermittent beep sound
	MODE2		Continuous beep sound
	MODE3		Beep sound
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3".	—
	Reset	Stops transmitting the buzzer output signal below to end the test.	—
	End	Returns to the "SELECT TEST ITEM" screen.	—

ACCELERATOR PEDAL ACTUATOR

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[ICC (FULL SPEED RANGE)]

CAUTION:

- Shift the selector lever to “P” position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

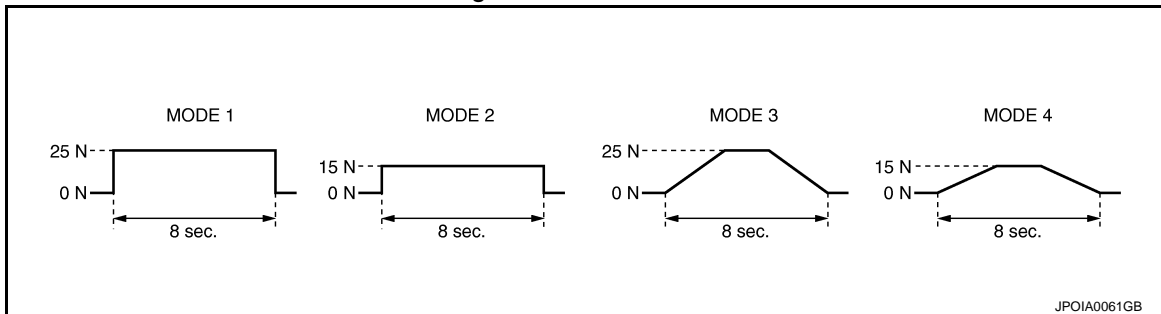
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

Test item	Operation	Description	Accelerator pedal operation
ACCELERATOR PEDAL ACTUATOR	MODE1	Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.	Constant with a force of 25 N for 8 seconds
	MODE2		Constant with a force of 15 N for 8 seconds
	MODE3		Change up to a force of 25 N for 8 seconds
	MODE4		Change up to a force of 15 N for 8 seconds
	Test start	Starts the tests of “MODE1”, “MODE2”, “MODE3”, and “MODE4”.	—
	Reset	Stops transmitting the accelerator pedal feedback force control signal below to end the test.	—
	End	Returns to the “SELECT TEST ITEM” screen.	—

NOTE:

The test is finished in 10 seconds after starting.



CCS

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

Description

INFOID:000000003902192

ICC sensor integrated unit function description

- It detects the reflected light from the vehicle ahead by irradiating a laser forward. It calculates the vehicle distance from and relative speed with the vehicle ahead depending on the detected signal.
- It calculates the target vehicle distance and the target vehicle speed depending on the signals from various sensors and switches, outputs the engine torque demand to ECM via CAN communication, and outputs the brake fluid pressure command signal to the brake booster control unit via ITS communication.

DTC Logic

INFOID:000000003902193

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00 (0)	CONTROL UNIT	ICC sensor integrated unit internal malfunction	ICC sensor integrated unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT-III.
3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A00" detected as the current malfunction?

- YES >> Refer to [CCS-52, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000003902194

1. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-158, "DTC Index"](#).
 NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902195

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the “Self Diagnostic Result”, and then perform “All DTC Reading” again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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CCS

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

Description

INFOID:000000003902196

The ICC sensor integrated unit controls the system with the ignition power supply.

DTC Logic

INFOID:000000003902197

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	POWER SUPPLY CIR	ICC sensor integrated unit power supply voltage is excessively low (less than 8 V).	<ul style="list-style-type: none">• Connector, harness, fuse• ICC sensor integrated unit
C1A02 (2)	POWER SUPPLY CIR 2	ICC sensor integrated unit power supply voltage is excessively high (more than 19 V).	

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A01" or "C1A02" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A01" or "C1A02" detected as the current malfunction?

YES >> Refer to [CCS-54, "Diagnosis Procedure"](#).

NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902198

1. CHECK ICC SENSOR INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ICC sensor integrated unit. Refer to [CCS-140, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

NO >> Repair or replace the malfunctioning parts.

Special Repair Requirement

INFOID:000000003902199

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

2. Check that the ICC system is normal.

>> WORK END

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C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A03 VEHICLE SPEED SENSOR

Description

INFOID:000000003902200

The ICC sensor integrated unit receives the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) and the A/T vehicle speed sensor signal (output shaft revolution signal) from TCM via CAN communication.

DTC Logic

INFOID:000000003902201

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) and the A/T vehicle speed sensor signal (output shaft revolution signal) from TCM, received by the ICC sensor integrated unit via CAN communication, are inconsistent	<ul style="list-style-type: none">• Wheel speed sensor• ABS actuator and electric unit (control unit)• Vehicle speed sensor A/T (output speed sensor)• TCM• ICC sensor integrated unit

NOTE:

If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04".

- Refer to [CCS-137, "DTC Logic"](#) for DTC "U1000".
- Refer to [CCS-58, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Drive the vehicle at 30 km/h (19 MPH) or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT-III.
6. Check if the "C1A03" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A03" detected as the current malfunction?

- YES >> Refer to [CCS-56, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902202

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A04" or "U1000" is detected other than "C1A03" in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-158, "DTC Index"](#).
NO >> GO TO 2.

2. CHECK DATA MONITOR

1. Start the engine.
2. Drive the vehicle.
3. Check that the value of "VHCL SPD AT" is almost the same as the value of "VHCL SPEED SE" in "DATA MONITOR" of "ICC".

CAUTION:

Be careful of the vehicle speed.

C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Is the inspection result normal?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
NO >> GO TO 3.

3.CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).
NO >> GO TO 4.

4.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902203

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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CCS

C1A04 ABS/TCS/VDC SYSTEM

Description

INFOID:000000003902204

ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), and VDC/TCS/ABS system operation condition to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902205

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A04 (4)	ABS/TCS/VDC CIRC	If a malfunction occurs in the VDC/TCS/ABS system	ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

Diagnosis Procedure

INFOID:000000003902206

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if the "U1000" is detected other than "C1A04" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902207

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

C1A04 ABS/TCS/VDC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

>> WORK END

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C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A05 BRAKE SW/STOP LAMP SW

Description

INFOID:000000003902208

- ICC brake switch is turned OFF and stop lamp switch is turned ON, when depressing the brake pedal.
- ICC brake switch signal and stop lamp switch signal are input to ECM. These signals are transmitted from ECM to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902209

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A05 (5)	BRAKE SW/STOP L SW	If ICC sensor integrated unit receives the ICC brake switch signal ON status during the stop lamp switch signal ON status	<ul style="list-style-type: none">• Stop lamp switch circuit• ICC brake switch circuit• Stop lamp switch• ICC brake switch• Incorrect stop lamp switch installation• Incorrect ICC brake switch installation• ECM

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

Diagnosis Procedure

INFOID:000000003902210

1.CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if the "U1000" is detected other than "C1A05" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> GO TO 12.
- NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 3.
- NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 8.

3.CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Adjust ICC brake switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

4.ICC BRAKE SWITCH INSPECTION

1. Disconnect ICC brake switch connector.
2. Check ICC brake switch. Refer to [CCS-63, "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace ICC brake switch.

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

5. CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
3	4	Existed

Is the inspection result normal?

- YES >> GO TO 6.
 NO >> Replace ICC brake hold relay.

6. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ICC BRAKE SWITCH

1. Check for continuity between ICC brake hold relay harness connector and ICC brake switch harness connector.

ICC brake hold relay		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
E91	4	E114	1	Existed

2. Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E91	4		Not existed

Is the inspection result normal?

- YES >> GO TO 7.
 NO >> Repair the harnesses or connectors.

7. CHECK HARNESS BETWEEN ECM AND ICC BRAKE SWITCH

1. Disconnect ECM connector.
2. Check for continuity between the ECM harness connector and ICC brake switch harness connector.

VQ35HR

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M107	126	E114	2	Existed

VK50VE

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M160	117	E114	2	Existed

3. Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	126		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	117		Not existed

Is the inspection result normal?

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C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

- YES >> GO TO 12.
- NO >> Repair the harnesses or connectors.

8. CHECK STOP LAMP FOR ILLUMINATION

Check the stop lamp for illumination.

Is the inspection result normal?

- YES >> GO TO 9.
- NO >> Repair the stop lamp circuit.

9. CHECK ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
3	4	Existed
6	7	Not existed

Is the inspection result normal?

- YES >> GO TO 10.
- NO >> Replace ICC brake hold relay.

10. CHECK HARNESS BETWEEN ECM AND ICC BRAKE HOLD RELAY

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors.
2. Check for continuity between the ECM harness connector and ICC brake hold relay harness connector.

VQ35HR

ECM		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
M107	122	E91	6	Existed

VK50VE

ECM		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
M160	110	E91	6	Existed

3. Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	122		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	110		Not existed

Is the inspection result normal?

- YES >> GO TO 11.
- NO >> Repair the harnesses or connectors.

11. CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND ICC BRAKE HOLD RELAY

1. Disconnect brake booster control unit connector.
2. Check for continuity between the brake booster control unit harness connector and brake hold relay harness connector.

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Brake booster control unit		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
B249	47	E91	1	Existed

3. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B249	47		Not existed

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-542. "DTC Index"](#) (VQ35HR) or [EC-1172. "DTC Index"](#) (VK50VE).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> GO TO 13.

13.CHECK ICC BRAKE HOLD RELAY DRIVE SIGNAL OUTPUT

1. Select the active test item "STOP LAMP" of "ICC".
2. Check if "STP LMP DRIVE" is turned ON when operating the test item.

Is the inspection result normal?

YES >> Replace brake booster control unit.

NO >> Replace ICC sensor integrated unit. Refer to [CCS-180. "Exploded View"](#).

Component Inspection (ICC Brake Switch)

INFOID:000000003902211

1.CHECK ICC BRAKE SWITCH

Check for continuity between ICC brake switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Not existed
		When brake pedal is released	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ICC brake switch.

Component Inspection (Stop Lamp Switch)

INFOID:000000003902212

CCS

1.CHECK STOP LAMP SWITCH

Check for continuity between stop lamp switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Terminal		Condition	Continuity
3	4	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch.

Special Repair Requirement

INFOID:000000003902213

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

C1A06 OPERATION SW

Description

INFOID:000000003902214

- Operate the ICC system ON/OFF and vehicle speed/vehicle distance setting by the ICC steering switch.
- The ICC steering switch signal is input to the ECM. It is transmitted from ECM to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902215

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	If the input signal from ICC steering switch is malfunctioning	<ul style="list-style-type: none"> • ICC steering switch circuit • ICC steering switch • ECM

NOTE:

If DTC "C1A06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Wait for approximately 5 minutes after turning the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A06" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A06" detected as the current malfunction?

- YES >> Refer to [CCS-65, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902216

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A06" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ICC STEERING SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the ICC steering switch connector.
3. Check the ICC steering switch. Refer to [CCS-66, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace the ICC steering switch.

3. CHECK HARNESS BETWEEN SPIRAL CABLE AND ECM

1. Disconnect the ECM connector.
2. Check for continuity between the spiral cable harness connector and ECM harness connector.

VQ35HR

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	

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M36	25	M107	101	Existed
	32		108	

VK50VE

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M36	25	M160	102	Existed
	32		111	

3. Check for continuity between spiral cable harness connector and ground.

Spiral cable		Ground	Continuity
Connector	Terminal		
M36	25		Not existed
	32		

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair the harnesses or connectors.

4.CHECK SPIRAL CABLE

Check for continuity between spiral cable terminals.

Spiral cable		Continuity
Terminal		
13	25	Existed
16	32	

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace the spiral cable.

5.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect the connectors of ICC steering switch and ECM connector.
2. Turn the ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

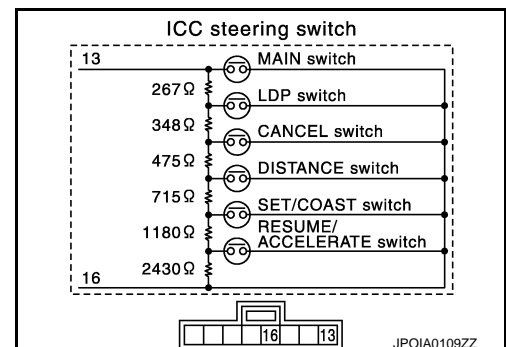
- YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Component Inspection

INFOID:000000003902217

1.CHECK ICC STEERING SWITCH

Check resistance between ICC steering switch terminals.



Terminal	Switch operation	Resistance [Ω]
13 16	When pressing MAIN switch	Approx. 0
	When pressing LDP switch	Approx. 267
	When pressing CANCEL switch	Approx. 615
	When pressing DISTANCE switch	Approx. 1090
	When pressing SET/COAST switch	Approx. 1805
	When pressing RESUME/ACCELERATE switch	Approx. 2985
	When all switches are not pressed	Approx. 5415

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the ICC steering switch.

Special Repair Requirement

INFOID:000000003902218

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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CCS

C1A08 PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A08 PRESSURE SENSOR

Description

INFOID:000000003902219

- The brake pressure sensor detects the brake fluid pressure value in the brake master cylinder and outputs the value to the brake booster control unit.
- The brake booster control unit receives the brake fluid pressure command signal from the ICC sensor integrated unit via ITS communication and controls the brake fluid pressure while feeding back the brake fluid pressure value (brake fluid pressure control signal).

DTC Logic

INFOID:000000003902220

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A08 (8)	PRESS SEN CIRCUIT	If the brake pressure sensor value that is input to the brake booster control unit is malfunctioning	<ul style="list-style-type: none"> • Brake pressure sensor circuit • Brake pressure sensor • Brake booster control unit

NOTE:

If DTC "C1A08" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A08" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A08" detected as the current malfunction?

- YES >> Refer to [CCS-68, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902221

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A08" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
 Refer to [CCS-137, "DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND BRAKE PRESSURE SENSOR

1. Turn the ignition switch OFF.
2. Disconnect connectors of brake booster control unit and brake pressure sensor.
3. Check for continuity between the brake booster control unit harness connector and brake pressure sensor harness connector.

Brake booster control unit		Brake pressure sensor		Continuity
Connector	Terminal	Connector	Terminal	
B250	8	E45	3	Existed
	17		2	
	24		1	

4. Check for continuity between brake booster control unit harness connector and ground.

C1A08 PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	8		Not existed
	17		
	24		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK BRAKE PRESSURE SENSOR POWER SUPPLY CIRCUIT

1. Connect connectors of brake booster control unit and brake pressure sensor.
2. Turn the ignition switch ON.
3. Check voltage between brake booster control unit harness connectors.

Terminals			Voltage (Approx.)
(+)	(-)		
Brake booster control unit			5 V
Connector	Terminal		
B250	8	24	

Is the inspection result normal?

YES >> Replace the brake pressure sensor.

NO >> Replace the brake booster control unit.

Special Repair Requirement

INFOID:000000003902222

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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C1A09 BOOSTER SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A09 BOOSTER SOLENOID

Description

INFOID:000000003902223

- The booster solenoid is integrated with the brake booster.
- The brake booster control unit activates the booster solenoid to operate the brake booster (brake) according to the brake fluid pressure command signal received from ICC sensor integrated unit via ITS communication.

DTC Logic

INFOID:000000003902224

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A09 (9)	BOOSTER SOL/V CIRC	If the booster solenoid is malfunctioning	<ul style="list-style-type: none">• Booster solenoid• Booster solenoid circuit• Brake booster control unit

NOTE:

If DTC "C1A09" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform the active test item "BOOSTER SOL/V" with CONSULT-III.
3. Perform "All DTC Reading".
4. Check if the "C1A09" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A09" detected as the current malfunction?

- YES >> Refer to [CCS-70, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902225

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A09" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BRAKE BOOSTER CONTROL UNIT POWER SUPPLY CIRCUIT

Check power supply and ground circuit of brake booster control unit. Refer to [CCS-140, "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3. CHECK HARNESS BETWEEN BRAKE BOOSTER (BOOSTER SOLENOID) AND BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Disconnect connectors of brake booster control unit and brake booster.
3. Check for continuity between the brake booster control unit harness connector and brake booster harness connector.

C1A09 BOOSTER SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Brake booster control unit		Brake booster		Continuity
Connector	Terminal	Connector	Terminal	
B250	10	E44	4	Existed
	12		6	

4. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	10		Not existed
	12		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4.CHECK BOOSTER SOLENOID

Check the booster solenoid. Refer to [CCS-71, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the brake booster control unit.

NO >> Replace the brake booster.

Component Inspection

INFOID:000000003902226

1.CHECK BRAKE BOOSTER (BOOSTER SOLENOID)

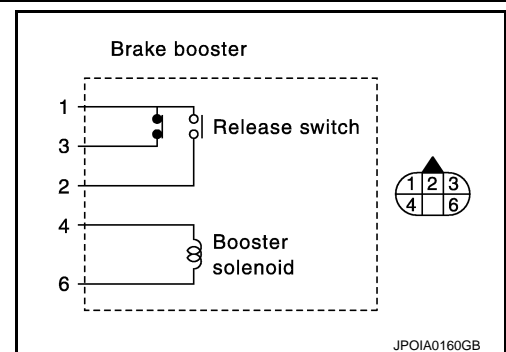
Check resistance between brake booster (booster solenoid) terminals.

Brake booster		Resistance
Terminal		
4	6	Approx. 1.4 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the brake booster.



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Special Repair Requirement

INFOID:000000003902227

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)

C1A09 BOOSTER SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

2. Check that the ICC system is normal.

>> WORK END

C1A10 RELEASE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A10 RELEASE SWITCH

Description

INFOID:000000003902228

- The release switch is integrated with the brake booster.
- The release switch detects that the driver depresses the brake pedal, and it outputs the signal to the brake booster control unit.
- The brake booster control unit transmits the release switch signal [release switch NO signal (normal open), release switch NC signal (normal close)] to the ICC sensor integrated unit via ITS communication.

DTC Logic

INFOID:000000003902229

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A10 (10)	RELEASE SW CIRC	If the release switch NO signal and the release switch NC signal, received from the brake booster control unit via ITS communication, are inconsistent	<ul style="list-style-type: none">• Release switch• Release switch circuit• Brake booster control unit

NOTE:

If DTC "C1A10" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE (1)

1. Start the engine.
2. Wait for approximately 5 minutes or more after turning the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A10" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A10" detected as the current malfunction?

- YES >> Refer to [CCS-73, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (2)

1. Depress the brake pedal strongly 10 times or more.
2. Perform "All DTC Reading".
3. Check if the "C1A10" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A10" detected as the current malfunction?

- YES >> Refer to [CCS-73, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902230

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A10" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK HARNESS BETWEEN BRAKE BOOSTER (RELEASE SWITCH) AND BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Disconnect connectors of brake booster and brake booster control unit.
3. Check for continuity between the brake booster control unit harness connector and brake booster harness connector.

C1A10 RELEASE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Brake booster control unit		Brake booster		Continuity
Connector	Terminal	Connector	Terminal	
B250	6	E44	1	Existed
	15		3	
	22		2	

4. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	6	Ground	Not existed
	15		
	22		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK RELEASE SWITCH POWER SUPPLY CIRCUIT

1. Connect the brake booster control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between brake booster control unit harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
Brake booster control unit		Ground
Connector	Terminal	
B250	6	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the brake booster control unit.

4. CHECK RELEASE SWITCH

Check the release switch. Refer to [CCS-74, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the brake booster control unit.

NO >> Replace the brake booster.

Component Inspection

INFOID:000000003902231

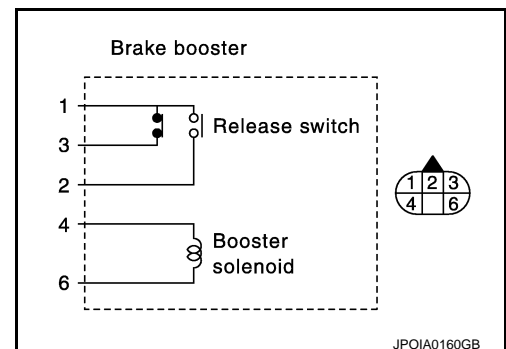
1. CHECK BRAKE BOOSTER (RELEASE SWITCH)

Check for continuity between brake booster (release switch) terminals.

Condition	1 - 3	1 - 2	2 - 3
Brake pedal not depressed	Continuity	No continuity	No continuity
Brake pedal depressed	No continuity ^{NOTE}	Continuity ^{NOTE}	No continuity

NOTE:

If the depressing force is weak, it may not be changed.



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C1A10 RELEASE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the brake booster.

Special Repair Requirement

INFOID:000000003902232

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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CCS

C1A11 PRESSURE CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A11 PRESSURE CONTROL

Description

INFOID:000000003902233

- The brake booster control unit receives the brake fluid pressure command signal from ICC sensor integrated unit via ITS communication and activates the booster solenoid to operate the brake booster.
- The brake booster adjusts the brake fluid pressure by driving the booster solenoid.
- The brake pedal is controlled when the brake booster adjusts the brake fluid pressure.

DTC Logic

INFOID:000000003902234

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A11 (11)	PRESSURE CONTROL	If the brake booster is malfunctioning	Brake booster

NOTE:

If DTC "C1A11" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform the active test item "BOOSTER SOL/V" with CONSULT-III.
3. Perform "All DTC Reading".
4. Check if the "C1A11" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A11" detected as the current malfunction?

- YES >> Refer to [CCS-76, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902235

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A11" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BRAKE OPERATION

Check if the brake operates normally.

Does it operate normally?

- YES >> GO TO 4.
NO >> GO TO 3.

3. BRAKE LINE INSPECTION

1. Check the brake system, and then repair malfunctioning parts.
2. Erases All self-diagnosis results.
3. Perform "BOOSTER SOL/V" on "Active Test" of "ICC".

Does it operate normally?

- YES >> INSPECTION END
NO >> GO TO 4.

4. CHECK BOOSTER SOLENOID

Check the booster solenoid. Refer to [CCS-77, "Component Inspection"](#).

C1A11 PRESSURE CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace the brake booster.

5. CHECK HARNESS BETWEEN BRAKE BOOSTER (BOOSTER SOLENOID) AND BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Disconnect connectors of brake booster control unit and brake booster.
3. Check for continuity between the brake booster control unit harness connector and brake booster harness connector.

Brake booster control unit		Brake booster		Continuity
Connector	Terminal	Connector	Terminal	
B250	10	E44	4	Existed
	12		6	

4. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	10		Not existed
	12		

Is the inspection result normal?

- YES >> Replace the brake booster control unit.
- NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000003902236

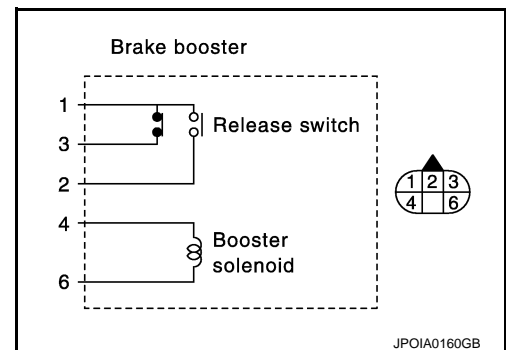
1. CHECK BRAKE BOOSTER (BOOSTER SOLENOID)

Check resistance between brake booster (booster solenoid) terminals.

Brake booster		Resistance
Terminal		
4	6	Approx. 1.4 Ω

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the brake booster.



INFOID:000000003902237

Special Repair Requirement

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

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C1A11 PRESSURE CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

2. CHECK ICC SYSTEM

1. Erase the “Self Diagnostic Result”, and then perform “All DTC Reading” again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

C1A12 LASER BEAM OFF CENTER

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A12 LASER BEAM OFF CENTER

Description

INFOID:000000003902238

ICC sensor integrated unit detects the reflected light from the vehicle ahead by irradiating a laser forward. It calculates the distance from and relative speed with the vehicle ahead based on the detected signal.

DTC Logic

INFOID:000000003902239

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A12 (12)	LASER BEAM OFFCNTR	Laser beam of ICC sensor integrated unit is off the aiming point	Laser beam is off the aiming point

Diagnosis Procedure

INFOID:000000003902240

1. ADJUST LASER BEAM AIMING

1. Adjust the laser beam aiming with CONSULT-III. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).
2. Perform "All DTC Reading".
3. Check if the "C1A12" is detected in "Self Diagnostic Result" of "ICC".

Is "C1A12" detected?

- YES >> Replace ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902241

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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CCS

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A13 STOP LAMP RELAY

Description

INFOID:000000003902242

- The ICC sensor integrated unit transmits the ICC brake hold relay drive signal to the brake booster control unit via ITS communication.
- The ICC brake hold relay activates the stop lamp by the ICC brake hold relay drive signal (stop lamp drive signal) outputted by the brake booster control unit.

DTC Logic

INFOID:000000003902243

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A13 (13)	STOP LAMP RLY FIX	<ul style="list-style-type: none">• If the stop lamp is not activated even though the ICC sensor integrated unit is transmitting a ICC brake hold relay drive signal.• If the stop lamp is activated even though the ICC sensor integrated unit is not transmitting a ICC brake hold relay drive signal.	<ul style="list-style-type: none">• Stop lamp switch circuit• ICC brake switch circuit• ICC brake hold relay circuit• Stop lamp switch• ICC brake switch• ICC brake hold relay• Incorrect stop lamp switch installation• Incorrect ICC brake switch installation• ECM

NOTE:

If DTC "C1A13" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE (1)

1. Start the engine.
2. Perform the active test item "STOP LAMP" with CONSULT-III.
3. Perform "All DTC Reading".
4. Check if the "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC".

Is "C1A13" detected as the current malfunction?

- YES >> Refer to [CCS-80, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (2)

1. Drive at the vehicle speed of 40 km/h (25 MPH) or more for approximately 20 seconds or more without the brake pedal depressed.

CAUTION:

Always drive safely.

NOTE:

If it is outside the above condition, repeat step 1.

2. Perform "All DTC Reading".
3. Check if the "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC".

Is "C1A13" detected as the current malfunction?

- YES >> Refer to [CCS-80, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902244

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A13" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

C1A13 STOP LAMP RELAY

[ICC (FULL SPEED RANGE)]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> GO TO 12.
- NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 3.
- NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9.

3.CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Adjust ICC brake switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

4.CHECK ICC BRAKE SWITCH

1. Disconnect ICC brake switch connector.
2. Check ICC brake switch. Refer to [CCS-63, "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace ICC brake switch.

5.CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
3	4	Existed

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Replace ICC brake hold relay.

6.CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ICC BRAKE SWITCH

1. Check for continuity between ICC brake hold relay harness connector and ICC brake switch harness connector.

ICC brake hold relay		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
E91	4	E114	1	Existed

2. Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E91	4		Not existed

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair the harnesses or connectors.

7.CHECK HARNESS BETWEEN ECM AND ICC BRAKE SWITCH

1. Disconnect ECM connector.

C1A13 STOP LAMP RELAY

[ICC (FULL SPEED RANGE)]

< DTC/CIRCUIT DIAGNOSIS >

2. Check for continuity between the ECM harness connector and ICC brake switch harness connector.

VQ35HR

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M107	126	E114	2	Existed

VK50VE

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M160	117	E114	2	Existed

3. Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	126		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	117		Not existed

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harnesses or connectors.

8. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Connect ECM connector.
2. Turn the ignition switch ON.
3. Check the voltage between ICC brake hold relay harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
ICC brake hold relay			Ground
Connector	Terminal		
E91	3		
			Battery voltage

Is the inspection result normal?

YES >> GO TO 20.

NO >> Repair ICC brake hold relay power supply circuit.

9. CHECK STOP LAMP FOR ILLUMINATION

1. Turn the ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check that the stop lamp is illuminated by depressing the brake pedal to turn the stop lamp ON.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Check the stop lamp circuit, and repair or replace the malfunctioning parts.

10. CHECK ICC BRAKE HOLD RELAY CIRCUIT

1. Connect ICC brake hold relay.
2. Disconnect the stop lamp switch connector.
3. Check that the stop lamp does not illuminate when brake pedal is not depressed.

Is the inspection result normal?

C1A13 STOP LAMP RELAY

[ICC (FULL SPEED RANGE)]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 20.
- NO >> GO TO 11.

11. CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
6	7	Not existed

Is the inspection result normal?

- YES >> GO TO 20.
- NO >> Replace ICC brake hold relay.

12. CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Disconnect brake booster control unit connector and remove ICC brake hold relay.
3. Check for continuity between the brake booster control unit harness connector and ICC brake hold relay harness connector.

Brake booster control unit		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
B249	47	E91	1	Existed

4. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B249	47		Not existed

Is the inspection result normal?

- YES >> GO TO 13.
- NO >> Repair the harnesses or connectors.

13. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND GROUND

Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E91	2		Existed

Is the inspection result normal?

- YES >> GO TO 14.
- NO >> Repair the harnesses or connectors.

14. CHECK ICC BRAKE HOLD RELAY

Check resistance between ICC brake hold relay terminals.

ICC brake hold relay		Resistance
Terminal		
1	2	Approx. 75 Ω

Is the inspection result normal?

- YES >> GO TO 15.
- NO >> Replace ICC brake hold relay.

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C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

15. CHECK BRAKE BOOSTER CONTROL UNIT OUTPUT VOLTAGE

1. Connect the brake booster control unit connector.
2. Turn ignition switch ON.
3. Perform "STOP LAMP" on "Active Test" of "ICC", and then check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ICC brake hold relay		Active Test item "STOP LAMP"	0 V
Connector	Terminal		
E91	1		
		Off	Battery voltage
		On	

Is the inspection result normal?

YES >> GO TO 16.

NO >> GO TO 21.

16. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ICC brake hold relay		Ground	Battery voltage
Connector	Terminal		
E91	7		

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace ICC brake hold relay power supply circuit.

17. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors.
2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector.

VQ35HR

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E91	6	M107	122	Existed

VK50VE

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E91	6	M160	110	Existed

3. Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E91	6		Not existed

Is the inspection result normal?

YES >> GO TO 18.

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

NO >> Repair the harnesses or connectors.

18.CHECK ICC BRAKE HOLD RELAY

1. Connect ECM, rear combination lamp, and high-mounted stop lamp connectors and ICC brake hold relay.
2. Disconnect the stop lamp switch connector.
3. Turn ignition switch ON.
4. Perform "STOP LAMP" on "Active Test" of "ICC", and then check the stop lamp for illumination.

Is the inspection result normal?

YES >> GO TO 19.

NO >> Replace ICC brake hold relay.

19.CHECK ICC BRAKE SWITCH STANDARD VOLTAGE

1. Turn ignition switch OFF.
2. Connect the stop lamp switch connector.
3. Turn ignition switch ON.
4. Perform "STOP LAMP" on "Active Test" of "ICC", and then check the voltage between ICC brake switch harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ICC brake switch		Active Test item "STOP LAMP"	Battery voltage
Connector	Terminal		
E114	1	Off	0 V
		On	0 V

Is the inspection result normal?

YES >> GO TO 20.

NO >> Replace ICC brake hold relay.

20.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> GO TO 21.

21.CHECK ICC BRAKE HOLD RELAY DRIVE SIGNAL OUTPUT

1. Select the active test item "STOP LAMP" of "ICC".
2. Check that "STP LMP DRIVE" is turned ON when operating the test item.

Is the inspection result normal?

YES >> Replace brake booster control unit.

NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Component Inspection

INFOID:000000003902245

1.CHECK ICC BRAKE HOLD RELAY

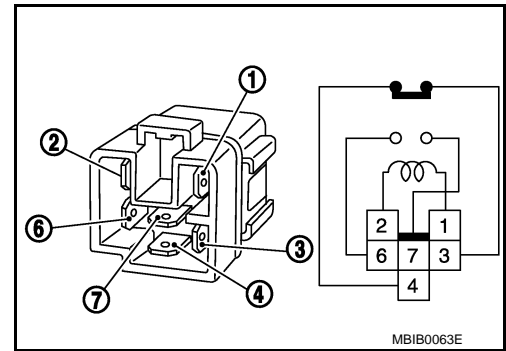
C1A13 STOP LAMP RELAY

[ICC (FULL SPEED RANGE)]

< DTC/CIRCUIT DIAGNOSIS >

Apply battery voltage to ICC brake hold relay terminals 1 and 2, and then check for continuity under the following conditions.

Condition	Terminal		Continuity
When the battery voltage is applied	3	4	Not existed
	6	7	Existed
When the battery voltage is not applied	3	4	Existed
	6	7	Not existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ICC brake hold relay.

Special Repair Requirement

INFOID:000000003902246

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

C1A14 ECM

Description

INFOID:000000003902247

- ECM transmits the accelerator pedal position signal, ICC brake switch signal, stop lamp switch signal, ICC steering switch signal, etc. to ICC sensor integrated unit via CAN communication.
- ECM controls the electric throttle control actuator based on the engine torque demand received from the ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902248

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	<ul style="list-style-type: none"> • Accelerator pedal position sensor • ECM • ICC sensor integrated unit

NOTE:

If DTC "C1A14" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Operate the ICC system and drive.
CAUTION:
Always drive safely.
3. Stop the vehicle.
4. Perform "All DTC Reading" with CONSULT-III.
5. Check if the "C1A14" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A14" detected as the current malfunction?

- YES >> Refer to [CCS-87, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902249

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A14" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902250

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

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< DTC/CIRCUIT DIAGNOSIS >

SPECIAL REPAIR REQUIREMENT**1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT**

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

-
1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
 2. Check that the ICC system is normal.

>> WORK END

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A15 GEAR POSITION

Description

INFOID:000000003902251

ICC sensor integrated unit judges the gear position based on the following signals.

- Shift position signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from input speed signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from the vehicle speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:000000003902252

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A15 (15)	GEAR POSITION	If a mismatch occurs between a shift position signal transmitted from TCM via CAN communication and the gear position calculated by ICC sensor integrated unit	<ul style="list-style-type: none">• Input speed sensor• Vehicle speed sensor A/T (output speed sensor)• TCM

NOTE:

If DTC "C1A15" is detected along with DTC "U1000", "C1A03", or "C1A04", first diagnose the DTC "U1000", "C1A03", or "C1A04".

- Refer to [CCS-137, "DTC Logic"](#) for DTC "U1000".
- Refer to [CCS-56, "DTC Logic"](#) for DTC "C1A03".
- Refer to [CCS-58, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT-III.
6. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC".

Is "C1A15" detected as the current malfunction?

YES >> Refer to [CCS-89, "Diagnosis Procedure"](#).

NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902253

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A03", "C1A04", or "U1000" is detected other than "C1A15" in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-158, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK VEHICLE SPEED SIGNAL

Check that "VHCL SPEED SE" operates normally in "DATA MONITOR" of "ICC".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 7.

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C1A15 GEAR POSITION

[ICC (FULL SPEED RANGE)]

< DTC/CIRCUIT DIAGNOSIS >

3. CHECK GEAR POSITION

Check that "GEAR" operates normally in "DATA MONITOR" of "ICC".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK GEAR POSITION SIGNAL

Check that "GEAR" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 6.

5. CHECK INPUT SPEED SENSOR SIGNAL

Check that "INPUT SPEED" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

NO >> GO TO 6.

6. CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".

2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).

NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

7. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".

2. Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).

NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902254

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

>> WORK END

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C1A16 RADAR STAIN

Description

INFOID:000000003902255

ICC sensor integrated unit detects the reflected light from the vehicle ahead by irradiating a laser beam forward. It calculates the distance from and relative speed with the vehicle ahead based on the detected signal.

DTC Logic

INFOID:000000003902256

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A16 (16)	RADAR STAIN	If any stain occurs to ICC sensor integrated unit body window	<ul style="list-style-type: none"> Stain or foreign materials is deposited Cracks or scratches exist

NOTE:

DTC "C1A16" may be detected under the following conditions. (Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".)

- When contamination or foreign materials adhere to the ICC sensor integrated unit body window
- When driving while it is snowing or when frost forms on the ICC sensor integrated unit body window
- When ICC sensor integrated unit body window is temporarily fogged

Diagnosis Procedure

INFOID:000000003902257

1. VISUAL CHECK 1

Check ICC sensor integrated unit body window for contamination and foreign materials.

Does contamination or foreign materials adhere?

- YES >> Wipe out the contamination and foreign materials from the ICC sensor integrated unit body window.
- NO >> GO TO 2.

2. VISUAL CHECK 2

Check ICC sensor integrated unit body window for cracks and scratches.

Is it found?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
- NO >> GO TO 3.

3. INTERVIEW

- Ask if there is any trace of contamination or foreign materials adhering to the ICC sensor integrated unit body window.
- Ask if ICC sensor integrated unit body window was frosted during driving or if vehicle was driven in snow.
- Ask if ICC sensor integrated unit body window was temporarily fogged. (Front window glass may also tend to fog, etc.)

What is the result of the interview with the customer?

- YES >> Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902258

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

C1A16 RADAR STAIN

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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CCS

C1A18 LASER AIMING INCOMP

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A18 LASER AIMING INCOMP

Description

INFOID:000000003902259

Always perform the laser beam aiming adjustment after replacing the ICC sensor integrated unit.

DTC Logic

INFOID:000000003902260

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A18 (18)	LASER AIMING INCOMP	Laser beam aiming of ICC sensor integrated unit is not adjusted	<ul style="list-style-type: none">No laser beam aiming adjustment is performedLaser beam aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A18" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A18" detected as the current malfunction?

- YES >> Refer to [CCS-94, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000003902261

1. ADJUST LASER BEAM AIMING

1. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).
2. Erase All self-diagnosis results with CONSULT-III.
3. Perform "All DTC Reading".
4. Check if the "C1A18" is detected in "Self Diagnostic Result" of "ICC".

Is "C1A18" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902262

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

C1A18 LASER AIMING INCOMP

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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C1A21 UNIT HIGH TEMP

Description

INFOID:000000003902263

ICC sensor integrated unit integrates the temperature sensor.

DTC Logic

INFOID:000000003902264

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A21 (21)	UNIT HIGH TEMP	If the temperature sensor (integrated in the ICC sensor integrated unit) detects a high temperature	Temperature around ICC sensor integrated unit is excessively high

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Wait for 10 minutes or more to cool the ICC sensor integrated unit.
3. Start the engine.
4. Turn the MAIN switch of ICC system ON.
5. Perform "All DTC Reading" with CONSULT-III.
6. Check if the "C1A21" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A21" detected as the current malfunction?

- YES >> Refer to [CCS-96, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902265

1. CHECK ENGINE COOLING SYSTEM

Check for any malfunctions in engine cooling system.

Is engine cooling system normal?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
 NO >> Repair engine cooling system.

Special Repair Requirement

INFOID:000000003902266

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

C1A21 UNIT HIGH TEMP

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

>> WORK END

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C1A22 BCU CIRCUIT

Description

INFOID:000000003902267

- The brake booster control unit receives the brake fluid pressure command signal from ICC sensor integrated unit via ITS communication and activates the booster solenoid to operate the brake booster.
- The brake booster adjusts the brake fluid pressure by driving the booster solenoid.
- The brake pedal is controlled when the brake booster adjusts the brake fluid pressure.

DTC Logic

INFOID:000000003902268

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A22 (22)	BCU CIRCUIT	If the brake booster control unit cannot control the brake booster	<ul style="list-style-type: none"> • Stop lamp switch circuit • ICC brake switch circuit • Stop lamp switch • ICC brake switch • Incorrect stop lamp switch installation • Incorrect ICC brake switch installation • ECM • Brake booster control unit

NOTE:

If DTC "C1A22" is detected along with DTC "U1000", or "C1A05", first diagnose the DTC "U1000", or "C1A05".

- Refer to [CCS-137, "DTC Logic"](#) for DTC "U1000".
- Refer to [CCS-60, "DTC Logic"](#) for DTC "C1A05".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A22" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A22" detected as the current malfunction?

- YES >> Refer to [CCS-98, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902269

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A05" or "U1000" is detected other than "C1A22" in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-158, "DTC Index"](#).
 NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> GO TO 10.
 NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 3.
 NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 5.

3. CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn the ignition switch OFF.

C1A22 BCU CIRCUIT

[ICC (FULL SPEED RANGE)]

< DTC/CIRCUIT DIAGNOSIS >

2. Check ICC brake switch for correct installation. Refer to [BR-7. "Inspection and Adjustment"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Adjust ICC brake switch installation. Refer to [BR-7. "Inspection and Adjustment"](#).

4. ICC BRAKE SWITCH INSPECTION

1. Disconnect ICC brake switch connector.

2. Check ICC brake switch. Refer to [CCS-63. "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ICC brake switch.

5. CHECK STOP LAMP FOR ILLUMINATION

Check stop lamp illumination.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the stop lamp circuit, and repair or replace the malfunctioning parts.

6. CHECK ICC BRAKE HOLD RELAY

1. Turn the ignition switch OFF.

2. Remove ICC brake hold relay.

3. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
3	4	Existed
6	7	Not existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace ICC brake hold relay.

7. CHECK HARNESS BETWEEN ECM AND ICC BRAKE HOLD RELAY

1. Disconnect ECM connector.

2. Check for continuity between the ECM harness connector and ICC brake hold relay harness connector.

VQ35HR

ECM		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
M107	122	E91	6	Existed

VK50VE

ECM		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
M160	110	E91	6	Existed

3. Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	122		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	110		Not existed

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C1A22 BCU CIRCUIT

[ICC (FULL SPEED RANGE)]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harnesses or connectors.

8. CHECK HARNESS BETWEEN ECM AND ICC BRAKE SWITCH

1. Check for continuity between the ECM harness connector and ICC brake switch harness connector.

VQ35HR

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M107	126	E114	2	Existed

VK50VE

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M160	117	E114	2	Existed

2. Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	126		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	117		Not existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair the harnesses or connectors.

9. CHECK HARNESS BETWEEN ICC BRAKE SWITCH AND ICC BRAKE HOLD RELAY

1. Disconnect ICC brake switch connector.
2. Check for continuity between ICC brake switch harness connector and ICC brake hold relay harness connector.

ICC brake switch		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
E114	1	E91	4	Existed

3. Check for continuity between ICC brake switch harness connector and ground.

ICC brake switch		Ground	Continuity
Connector	Terminal		
E114	1		Not existed

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair the harnesses or connectors.

10. PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn the ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

C1A22 BCU CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).
- NO >> Replace the brake booster control unit.

Special Repair Requirement

INFOID:000000003902270

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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CCS

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A24 NP RANGE

Description

INFOID:000000003902271

ICC sensor integrated unit judges the NP position status from the shift position signal and current gear position signal received from TCM via CAN communication.

DTC Logic

INFOID:000000003902272

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	If the shift position signal and the current gear position signal, transmitted from TCM via CAN communication, are inconsistent	<ul style="list-style-type: none">• TCM• Transmission range switch

NOTE:

If DTC "C1A24" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. CHECK DTC REPRODUCE (1)

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Wait for approximately 5 minutes or more after shifting the selector lever to "P" position.
4. Perform "All DTC Reading" with CONSULT-III.
5. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [CCS-102, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. CHECK DTC REPRODUCE (2)

1. Wait for approximately 5 minutes or more after shifting the selector lever to "N" position.
2. Perform "All DTC Reading".
3. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [CCS-102, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902273

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A24" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK NP POSITION SWITCH SIGNAL

Check that "NP RANGE SW" operates normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

3. CHECK TCM DATA MONITOR

Check that "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

C1A24 NP RANGE

[ICC (FULL SPEED RANGE)]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
NO >> GO TO 4.

4.PERFORM TCM SELF-DIAGNOSIS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902274

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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CCS

C1A28 BCU POWER SUPPLY CIRCUIT, C1A29 BCU POWER SUPPLY CIRCUIT2

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A28 BCU POWER SUPPLY CIRCUIT, C1A29 BCU POWER SUPPLY CIRCUIT2

Description

INFOID:000000003902275

The brake booster control unit controls the brake booster, etc. with the battery power supply and ignition power supply.

DTC Logic

INFOID:000000003902276

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A28 (28)	BCU PWR SUPPLY CIR	The brake booster control unit power supply voltage is excessively low (less than 8 V).	<ul style="list-style-type: none">• Brake booster control unit• Harness, connector, fuse
C1A29 (29)	BCU PWR SUPPLY CIR 2	The brake booster control unit power supply voltage is excessively high (more than 19 V).	

NOTE:

If DTC "C1A28" or "C1A29" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A28" or "C1A29" is detected as the current malfunction in "Self Diagnostic Result".

Is "C1A28" or "C1A29" detected as the current malfunction?

- YES >> Refer to [CCS-104, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902277

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A28", "C1A29" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BRAKE BOOSTER CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check brake booster control unit power supply and ground circuit. Refer to [CCS-140, "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace the brake booster control unit.
NO >> Repair brake booster control unit power supply and ground circuit.

Special Repair Requirement

INFOID:000000003902278

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

C1A28 BCU POWER SUPPLY CIRCUIT, C1A29 BCU POWER SUPPLY CIRCUIT2

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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C1A30 BCU CAN COMM CIRC

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A30 BCU CAN COMM CIRC

Description

INFOID:000000003902279

The brake booster control unit communicates with ICC sensor integrated unit for brake booster control via ITS communication.

DTC Logic

INFOID:000000003902280

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A30 (30)	BCU CAN COMM CIRC	If ICC sensor integrated unit receives the signal for improper condition for brake booster control unit via ITS communication	ITS communication system

Diagnosis Procedure

INFOID:000000003902281

1.PERFORM THE SELF-DIAGNOSIS

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A30" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A30" detected as the current malfunction?

- YES >> Perform trouble diagnosis for the ITS communication system. Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).
- NO >> Refer to [GI-35. "Intermittent Incident"](#).

Special Repair Requirement

INFOID:000000003902282

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

C1A31 BCU INTERNAL MALF

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A31 BCU INTERNAL MALF

Description

INFOID:000000003902283

The brake booster control unit inputs the brake fluid pressure control signal and release switch signal and transmits them to ICC sensor integrated unit via ITS communication. Also, it receives the brake fluid pressure command signal from ICC sensor integrated unit via ITS communication and activates the booster solenoid to operate the brake booster (brake).

DTC Logic

INFOID:000000003902284

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A31 (31)	BCU INTERNAL MALF	Brake booster control unit internal malfunction	Brake booster control unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A31" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A31" detected as the current malfunction?

- YES >> Refer to [CCS-107, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902285

1. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A31" is detected in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-158, "DTC Index"](#).
NO >> Replace the brake booster control unit.

Special Repair Requirement

INFOID:000000003902286

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)

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CCS

C1A31 BCU INTERNAL MALF

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

2. Check that the ICC system is normal.

>> WORK END

C1A32 IBA FLAG STUCK

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A32 IBA FLAG STUCK

Description

INFOID:000000003902287

ICC sensor integrated unit shares components with the IBA system.

DTC Logic

INFOID:000000003902288

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A32 (32)	IBA FLAG STUCK	If the control (detection) of IBA is malfunctioning	<ul style="list-style-type: none">• ICC sensor integrated unit• Brake booster control unit

NOTE:

If DTC "C1A32" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Wait for approximately 5 minutes or more after turning the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A32" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A32" detected as the current malfunction?

- YES >> Refer to [CCS-109, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902289

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A32" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Replace the brake booster control unit.
3. Erases All self-diagnosis results.
4. Perform DTC confirmation procedure. Refer to [CCS-109, "DTC Logic"](#).
5. Perform "All DTC Reading".
6. Check if the "C1A32" is detected in "Self Diagnostic Result" of "ICC".

Is "C1A32" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902290

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

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C1A32 IBA FLAG STUCK

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

C1A33 CAN TRANSMISSION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A33 CAN TRANSMISSION ERROR

Description

INFOID:000000003902291

ICC sensor integrated unit transmits the signal required by the ICC system control to ECM via CAN communication.

DTC Logic

INFOID:000000003902292

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A33 (33)	CAN TRANSMISSION ERROR	If an error occurs in the CAN communication signal that ICC sensor integrated unit transmits to ECM	ICC sensor integrated unit

NOTE:

If DTC "C1A33" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A33" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A33" detected as the current malfunction?

- YES >> Refer to [CCS-111, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902293

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A33" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902294

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK ICC SYSTEM

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C1A33 CAN TRANSMISSION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

C1A34 COMMAND ERROR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A34 COMMAND ERROR

Description

INFOID:000000003902295

ICC sensor integrated unit transmits the command signal required for the ECM control via CAN communication.

DTC Logic

INFOID:000000003902296

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A34 (34)	COMMAND ERROR	If an error occurs in the command signal that ICC sensor integrated unit transmits to ECM via CAN communication	ICC sensor integrated unit

NOTE:

If DTC "C1A34" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Operate the ICC system and drive.
CAUTION:
Always drive safely.
3. Stop the vehicle.
4. Perform "All DTC Reading" with CONSULT-III.
5. Check if the "C1A34" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A34" detected as the current malfunction?

- YES >> Refer to [CCS-113, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902297

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A34" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902298

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

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C1A34 COMMAND ERROR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A39 STEERING ANGLE SENSOR

Description

INFOID:000000003902299

It measures the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902300

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39 (39)	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor is malfunction

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A39" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to [CCS-115, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902301

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902302

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

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C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

C1A40 SYSTEM SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

C1A40 SYSTEM SWITCH CIRCUIT

Description

INFOID:000000003943261

DCA SWITCH

- The DCA system ON/OFF operation is performed by the DCA switch.
- The DCA switch signal is input to the brake booster control unit, and transmitted from the brake booster control unit to the ICC sensor integrated unit via ITS communication.

IBA OFF SWITCH

- The IBA ON/OFF operation is performed by IBA OFF switch.
- The IBA OFF switch signal is input to the brake booster control unit and transmits from the brake booster control unit to the ICC sensor integrated unit via ITS communication.

DTC Logic

INFOID:000000003943262

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A40 (40)	SYSTEM SW CIRC	If the DCA switch or the IBA OFF switch is stuck to ON	<ul style="list-style-type: none">• DCA switch circuit• DCA switch• IBA OFF switch circuit• IBA OFF switch• Brake booster control unit

NOTE:

If DTC "C1A40" is displayed along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine and wait for approximately 10 minutes or more.
2. Perform "All DTC Reading" with CONSULT-III.
3. Check if the "C1A40" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A40" detected as the current malfunction?

- YES >> Refer to [CCS-117, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003943263

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A40" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-137, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK DATA MONITOR

Check that "DCA ON SW" and "IBA SW" operate normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> Refer to [GI-35, "Intermittent Incident"](#).
NO-1 >> When "DCA ON SW" is malfunctioning: GO TO 3
NO-2 >> When "IBA SW" is malfunctioning: GO TO 7

3. CHECK DCA SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the DCA switch connector.

C1A40 SYSTEM SWITCH CIRCUIT

[ICC (FULL SPEED RANGE)]

< DTC/CIRCUIT DIAGNOSIS >

3. Check the DCA switch. Refer to [CCS-119. "Component Inspection \(DCA Switch\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the DCA switch.

4.CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND DCA SWITCH

1. Disconnect brake booster control unit connector.
2. Check for continuity between brake booster control unit harness connector and DCA switch harness connector.

Brake booster control unit		DCA switch		Continuity
Connector	Terminal	Connector	Terminal	
B250	9	M18	1	Existed

3. Check for continuity between brake booster control unit and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	9		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5.CHECK DCA SWITCH GROUND CIRCUIT

Check for continuity between DCA switch harness connector and ground.

DCA switch		Ground	Continuity
Connector	Terminal		
M18	2		Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair the harnesses or connectors.

6.CHECK DCA SWITCH SIGNAL

1. Connect the brake booster control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between brake booster control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
Brake booster control unit			Battery voltage
Connector	Terminal	Ground	
B250	9		

Is the inspection result normal?

YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180. "Exploded View".](#)

NO >> Replace the brake booster control unit.

7.CHECK IBA OFF SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the IBA OFF switch connector.
3. Check the IBA OFF switch. Refer to [CCS-120. "Component Inspection \(IBA OFF Switch\)".](#)

Is the inspection result normal?

YES >> GO TO 8.

C1A40 SYSTEM SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

NO >> Replace the IBA OFF switch.

8. CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND IBA OFF SWITCH

1. Disconnect brake booster control unit connector.
2. Check for continuity between the brake booster control unit harness connector and IBA OFF switch harness connector.

Brake booster control unit		IBA OFF switch		Continuity
Connector	Terminal	Connector	Terminal	
B249	40	M184	7	Existed

3. Check for continuity between brake booster control unit and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B249	40		Not existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair the harnesses or connectors.

9. CHECK IBA OFF SWITCH GROUND CIRCUIT

Check for continuity between IBA OFF switch harness connector and ground.

IBA OFF switch		Ground	Continuity
Connector	Terminal		
M184	6		Exists

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair the harnesses or connectors.

10. CHECK IBA OFF SWITCH SIGNAL

1. Connect the brake booster control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between brake booster control unit harness connector and ground.

Terminals		Ground	Voltage (Approx.)
(+)	(-)		
Brake booster control unit			Battery voltage
Connector	Terminal		
B249	40		

Is the inspection result normal?

YES >> Replace ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

NO >> Replace the brake booster control unit.

Component Inspection (DCA Switch)

INFOID:000000003943264

1. CHECK DCA SWITCH

Check for continuity of DCA switch.

Terminal	Condition	Continuity
1	2 When the DCA switch is pressed	Existed
	When the DCA switch is released	Not existed

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C1A40 SYSTEM SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the DCA switch.

Component Inspection (IBA OFF Switch)

INFOID:000000003959729

1.CHECK IBA OFF SWITCH

Check for continuity of IBA OFF switch.

Terminal		Condition	Continuity
6	7	When the IBA OFF switch is pressed	Existed
		When the IBA OFF switch is released	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the IBA OFF switch.

Special Repair Requirement

INFOID:000000003943270

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U0121 VDC CAN 2

Description

INFOID:000000003902303

ABS actuator and electric unit (control unit) transmits the VDC system signal to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902304

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ICC sensor integrated unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC “U0121” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform “All DTC Reading” with CONSULT-III.
4. Check if the “U0121” is detected as the current malfunction in “Self Diagnostic Result” of “ICC”.

Is “U0121” detected as the current malfunction?

- YES >> Refer to [CCS-121, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902305

1. CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U0121” in “Self Diagnostic Result” of “ICC”.

Is “U1000” detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “ABS”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902306

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

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1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U0126 STRG SEN CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

U0126 STRG SEN CAN 1

Description

INFOID:000000003902307

It measures the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902308

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126 (130)	STRG SEN CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor error

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "U0126" detected as the current malfunction?

- YES >> Refer to [CCS-123, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902309

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902310

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

U0126 STRG SEN CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U0129 BCU CAN 2

Description

INFOID:000000003902311

The brake booster control unit transmits the signal related to brake control to ICC sensor integrated unit via ITS communication.

DTC Logic

INFOID:000000003902312

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0129 (125)	BCU CAN CIR2	If ICC sensor integrated unit detects an error signal that is received from brake booster control unit via ITS communication	Brake booster control unit

NOTE:

If DTC "U0129" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0129" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "U0129" detected as the current malfunction?

- YES >> Refer to [CCS-125, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902313

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0129" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2. REPLACE BRAKE BOOSTER CONTROL UNIT

1. Turn ignition switch OFF.
2. Replace brake booster control unit.
3. Erases All self-diagnosis results.
4. Perform DTC confirmation procedure. Refer to [CCS-125, "DTC Logic"](#).
5. Perform "All DTC Reading".
6. Check if the "U0129" is detected in "Self Diagnostic Result" of "ICC".

Is "U0129" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
- NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902314

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit



SPECIAL REPAIR REQUIREMENT**1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT**

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U0401 ECM CAN 1

Description

INFOID:000000003902315

ECM transmits the signal related to engine control (ICC system) to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902316

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "U0401" detected as the current malfunction?

- YES >> Refer to [CCS-127, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902317

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902318

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

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U0401 ECM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U0402 TCM CAN 1

Description

INFOID:000000003902319

TCM transmits the signal related to A/T control to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902320

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402 (122)	TCM CAN CIRC1	If ICC sensor integrated unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0402" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "U0402" detected as the current malfunction?

- YES >> Refer to [CCS-129, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902321

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902322

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

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U0402 TCM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U0415 VDC CAN 1

Description

INFOID:000000003902323

ABS actuator and electric unit (control unit) transmits the signal related to the VDC system to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902324

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "U0415" detected as the current malfunction?

- YES >> Refer to [CCS-131, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902325

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902326

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

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1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U0418 BCU CAN 1

Description

INFOID:000000003902327

The brake booster control unit transmits the signal related to brake control to ICC sensor integrated unit via ITS communication.

DTC Logic

INFOID:000000003902328

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0418 (124)	BCU CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from brake booster control unit via ITS communication	Brake booster control unit

NOTE:

If DTC "U0418" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0418" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "U0418" detected as the current malfunction?

- YES >> Refer to [CCS-133, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902329

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0418" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
- NO >> GO TO 2.

2. REPLACE BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Replace the brake booster control unit.
3. Erases All self-diagnosis results.
4. Perform DTC confirmation procedure. Refer to [CCS-133, "DTC Logic"](#).
5. Perform "All DTC Reading".
6. Check if the "U0418" is detected in "Self Diagnostic Result" of "ICC".

Is "U0418" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
- NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902330

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

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SPECIAL REPAIR REQUIREMENT**1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT**

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U0428 STRG SEN CAN 2

Description

INFOID:000000003902331

It detects the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902332

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428 (131)	STRG SEN CAN CIR2	If ICC sensor integrated unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-137, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "U0428" detected as the current malfunction?

- YES >> Refer to [CCS-135, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902333

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
 NO >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902334

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

U0428 STRG SEN CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

U1000 CAN COMM CIRCUIT

Description

INFOID:000000003902335

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32. "CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting ICC sensor integrated unit, brake booster control unit, and accelerator pedal actuator with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:000000003902336

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000 (100)	CAN COMM CIRCUIT	If ICC sensor integrated unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	<ul style="list-style-type: none">• CAN communication system• ITS communication system

NOTE:

If "U1000" is detected, first diagnose the CAN communication system.

Diagnosis Procedure

INFOID:000000003902337

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the MAIN switch of ICC system ON, and then wait for 2 seconds or more.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-35. "Intermittent Incident"](#).

Special Repair Requirement

INFOID:000000003902338

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

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U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

2. CHECK ICC SYSTEM

1. Erase the “Self Diagnostic Result”, and then perform “All DTC Reading” again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

U1010 CONTROL UNIT (CAN)

Description

INFOID:000000003902339

CAN controller controls the communication of CAN communication signal and the error detection.

DTC Logic

INFOID:000000003902340

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010 (110)	CONTROL UNIT (CAN)	If ICC sensor integrated unit detects malfunction by CAN controller initial diagnosis	ICC sensor integrated unit

Diagnosis Procedure

INFOID:000000003902341

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the MAIN switch of ICC system ON.
2. Perform "All DTC Reading" with CONSULT-III.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "U1010" detected as the current malfunction?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902342

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK ICC SYSTEM

1. Erase the "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> WORK END

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

POWER SUPPLY AND GROUND CIRCUIT

ICC SENSOR INTEGRATED UNIT

ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure

INFOID:000000003902343

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	45

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

2.CHECK ICC SENSOR INTEGRATED UNIT POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between ICC sensor integrated unit harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
ICC sensor integrated unit		Battery voltage
Connector	Terminal	
E67	1	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit power supply circuit.

3.CHECK ICC SENSOR INTEGRATED UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ICC sensor integrated unit connector.
3. Check for continuity between ICC sensor integrated unit harness connector and ground.

ICC sensor integrated unit		Ground	Continuity
Connector	Terminal		
E67	4		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ICC sensor integrated unit ground circuit.

BRAKE BOOSTER CONTROL UNIT

BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure

INFOID:000000003902344

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Battery power supply	33
Ignition power supply	45

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

2. CHECK BRAKE BOOSTER CONTROL UNIT POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between brake booster control unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
Brake booster control unit		Ignition switch	Battery volt- age
Connector	Terminal		
B250	1	OFF	
	2		
B249	33	ON	
	42		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the brake booster control unit power supply circuit.

3. CHECK BRAKE BOOSTER CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect brake booster control unit connector.
3. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	19		Existed
	20		
B249	46		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the brake booster control unit ground circuit.

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CCS

ICC WARNING CHIME CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

ICC WARNING CHIME CIRCUIT

Description

INFOID:000000003902345

- The ICC sensor integrated unit transmits the buzzer output signal to the brake booster control unit via ITS communication.
- The brake booster control unit outputs the buzzer output signal to the ICC warning chime.
- A warning chime sounds when the system is canceled or when the vehicle distance from the vehicle ahead is too close.

Component Function Check

INFOID:000000003902346

1. ICC WARNING CHIME OPERATION INSPECTION

1. Select the active test item "ICC BUZZER" of "ICC" with CONSULT-III.
2. Check if the ICC warning chime sounds when operating each test item.

Does the ICC warning chime sound?

- YES >> The ICC warning chime circuit is normal.
NO >> Refer to [CCS-142, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003902347

1. CHECK ICC WARNING CHIME POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the ICC warning chime connector.
3. Turn ignition switch ON.
4. Check voltage between ICC warning chime harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
ICC warning chime		Ground
Connector	Terminal	
M17	1	
		Battery voltage

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2. CHECK ICC WARNING CHIME SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect brake booster control unit connector.
3. Check for continuity between the ICC warning chime harness connector and brake booster control unit harness connector.

ICC warning chime		Brake booster control unit		Continuity
Connector	Terminal	Connector	Terminal	
M17	3	B250	21	Existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3. CHECK ICC WARNING CHIME SIGNAL CIRCUIT SHORT

Check for continuity between ICC warning chime harness connector and ground.

ICC WARNING CHIME CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

ICC warning chime		Ground	Continuity
Connector	Terminal		
M17	3		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4.CHECK ICC WARNING CHIME

Check the ICC warning chime. Refer to [CCS-143, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the brake booster control unit.

NO >> Replace the ICC warning chime.

Component Inspection

INFOID:000000003902348

1.ICC WARNING CHIME INSPECTION

Apply the battery voltage between ICC warning chime terminals, and then check if the ICC warning chime sounds.

Terminal		Condition	Warning chime
(+)	(-)		
1	3	When the battery voltage is applied	Sounds
		When the battery voltage is not applied	Does not sound

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the ICC warning chime.

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CCS

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

ECU DIAGNOSIS INFORMATION

ICC SENSOR INTEGRATED UNIT

Reference Value

INFOID:000000003902349

VALUES ON THE DIAGNOSIS TOOL

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and operate the ICC system.	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	<ul style="list-style-type: none"> • Start the engine and turn the ICC system ON. • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting. 	When set to "long"	Long
		When set to "middle"	Mid
		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch.	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Start the engine and press MAIN switch.	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press the MAIN switch.	When ICC system is malfunctioning (ICC system warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

Monitor item	Condition		Value/Status
BA WARNING	Engine running	IBA OFF indicator lamp ON • When IBA system is malfunctioning • When IBA system is turned to OFF	On
		IBA OFF indicator lamp OFF • When IBA system is normal • When IBA system is turned to ON	Off
VHCL SPEED SE	While driving		Value of vehicle speed signal (wheel speed)
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed.
BUZZER O/P	Engine running	When the buzzer output signal is output	On
		When the buzzer output signal is not output	Off
THRTL SENSOR	NOTE: The item is indicated, but not monitored		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating	Off
		Wiper LO operation	Low
		Wiper HI operation	High
YAW RATE	NOTE: The item is indicated, but not monitored		0.0
RELEASE SW NO	Engine running	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
RELEASE SW NC	Engine running	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When ICC brake hold relay is activated	On
		When the ICC brake hold relay is not activated	Off
PRESS SENS	Engine running	When brake pedal is not depressed	0.0
		When brake pedal is depressed	Brake fluid pressure value
D RANGE SW	Engine running	When the selector lever is in "D", "DS" position or manual mode	On
		When the selector lever is in any position other than "D", "DS" or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in "N", "P" position	On
		When the selector lever is in any position other than "N", "P"	Off
PWR SUP MONI	Engine running		Power supply voltage value of ICC sensor integrated unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position.
GEAR	While driving		Displays the shift position.

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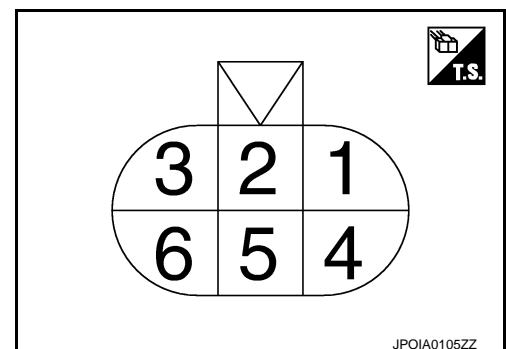
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

Monitor item	Condition		Value/Status
CLUTCH SW SIG	NOTE: The item is indicated, but not monitored		Off
NP SW SIG	NOTE: The item is indicated, but not used		—
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated	Off
		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
SET DISP IND	<ul style="list-style-type: none"> • Start the engine and activate the conventional (fixed speed) cruise control mode. • Press SET/COAST switch 	SET switch indicator lamp ON	On
		SET switch indicator lamp OFF	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected	Displays the distance from the preceding vehicle.
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected	Displays the relative speed.
		When a vehicle ahead is not detected	0.0
DCA ON SW	Ignition switch ON	When the DCA switch is not pressed	Off
		When the DCA switch is pressed	On
DCA ON IND	Start the engine	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA PWR	Ignition switch ON		Power supply voltage
IBA SW	Ignition switch ON	When the IBA OFF switch is not pressed	Off
		When the IBA OFF switch is pressed	On

TERMINAL LAYOUT



ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
2 (L)		ITS communication-H	Input/ Output	—	—
3 (G)		CAN-H	Input/ Output	—	—
4 (B)		Ground	—	Ignition switch ON	0 V
5 (P)		ITS communication-L	Input/ Output	—	—
6 (BR)		CAN-L	Input/ Output	—	—

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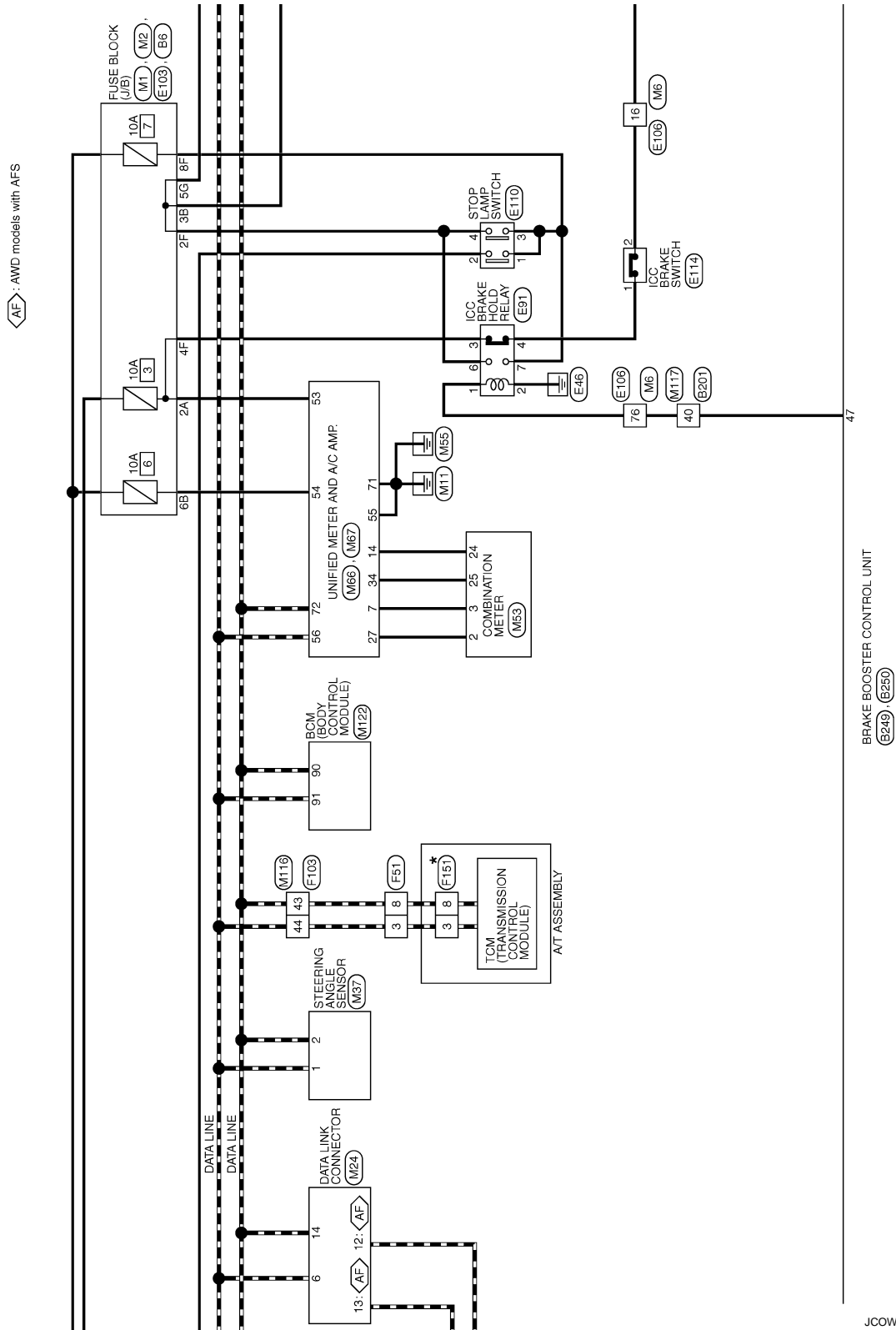
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ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]



*: This connector is not shown in "Harness Layout".

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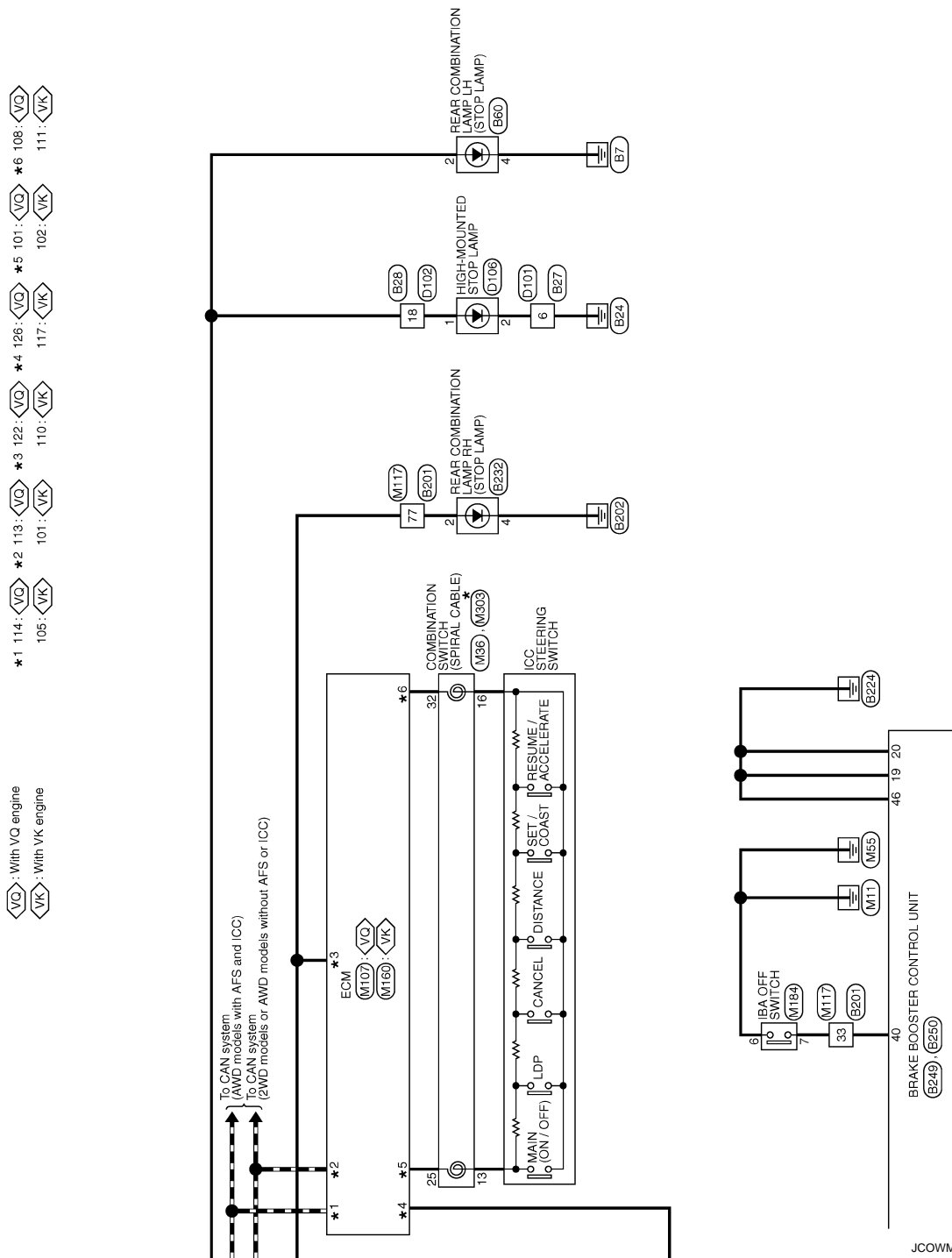
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ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]



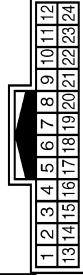
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]


INTELLIGENT CRUISE CONTROL (FULL SPEED RANGE)

Connector No.	B28
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



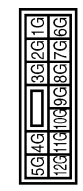
Terminal No.	18	Color of Wire	LG	Signal Name [Specification]	
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Connector No.	B27
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-LC



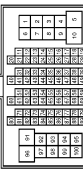
Terminal No.	6	Color of Wire	GR	Signal Name [Specification]	
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Connector No.	B6
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS17PER-CS




Terminal No.	5G	Color of Wire	LG	Signal Name [Specification]	
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Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	80	Color of Wire	L	Signal Name [Specification]	
Terminal No.	81	Color of Wire	P	Signal Name [Specification]	
Terminal No.	82	Color of Wire	L	Signal Name [Specification]	
Terminal No.	83	Color of Wire	P	Signal Name [Specification]	


Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	TH24MW-NH



Terminal No.	4	Color of Wire	B	Signal Name [Specification]	
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Terminal No.	46	Color of Wire	O	Signal Name [Specification]	- [With ICC]
Terminal No.	47	Color of Wire	L	Signal Name [Specification]	- [With ICC]
Terminal No.	48	Color of Wire	P	Signal Name [Specification]	- [With ICC]
Terminal No.	50	Color of Wire	G	Signal Name [Specification]	- [With ICC]
Terminal No.	77	Color of Wire	LG	Signal Name [Specification]	

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	1	Color of Wire	G	Signal Name [Specification]	
Terminal No.	2	Color of Wire	R	Signal Name [Specification]	
Terminal No.	31	Color of Wire	W	Signal Name [Specification]	
Terminal No.	32	Color of Wire	GR	Signal Name [Specification]	
Terminal No.	33	Color of Wire	SB	Signal Name [Specification]	
Terminal No.	40	Color of Wire	LG	Signal Name [Specification]	- [With ICC]
Terminal No.	41	Color of Wire	SB	Signal Name [Specification]	- [With ICC]
Terminal No.	42	Color of Wire	V	Signal Name [Specification]	- [With ICC]
Terminal No.	43	Color of Wire	BR	Signal Name [Specification]	- [With ICC]
Terminal No.	44	Color of Wire	R	Signal Name [Specification]	- [With ICC]
Terminal No.	45	Color of Wire	G	Signal Name [Specification]	- [With ICC]

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	TH24MW-NH



Terminal No.	2	Color of Wire	LG	Signal Name [Specification]	
Terminal No.	4	Color of Wire	B	Signal Name [Specification]	

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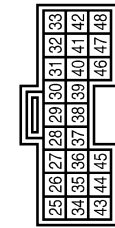
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

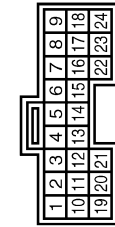
INTELLIGENT CRUISE CONTROL (FULL SPEED RANGE)

Connector No.	B249
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TH24FY



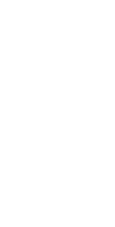
Terminal No.	Color of Wire	Signal Name [Specification]
33	G	IGNITION
40	SB	IBA OFF SW
42	G	IGNITION
46	B	GND
47	LG	BRAKE HOLD RLY DRIVE SIGNAL

Connector No.	B250
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BATTERY
2	W	BATTERY
5	P	ITS COMM-L
6	SB	RELEASE SW PWR
8	R	RELEASE SW PWR
10	G	BOOSTER SOL PWR
12	R	BOOSTER SOL GND
14	L	ITS COMM-H
15	V	RELEASE SW (NO)
17	G	RELEASE SW (NO)
19	B	BRAKE PRESSURE SEN SIGNAL GND

20	B	GND
21	GR	CHIME SIGNAL
22	BR	RELEASE SW (NO)
24	O	BRAKE PRESSURE SEN GND

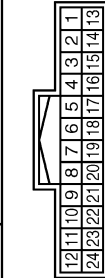


Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	TH08FW-LC



Terminal No.	Color of Wire	Signal Name [Specification]
6	GR	

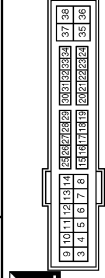
Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH24FV-NH



Connector No.	D106
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	TH02MW



Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-GS12-M4-IV



Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
18	LG	

Terminal No.	Color of Wire	Signal Name [Specification]
2	B	

Terminal No.	Color of Wire	Signal Name [Specification]
23	G	
26	R	

Terminal No.	Color of Wire	Signal Name [Specification]
39	P	
40	L	

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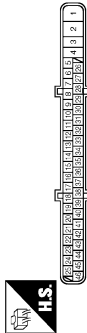
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

INTELLIGENT CRUISE CONTROL (FULL SPEED RANGE)

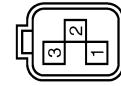
Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC CONTROL UNIT
Connector Type	BAK42PE-AH24-LH



Connector No.	E44
Connector Name	BRAKE BOOSTER
Connector Type	RV06FGY



Connector No.	E45
Connector Name	BRAKE PRESSURE SENSOR
Connector Type	AAJ203FBZ



Connector No.	E67
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	RS03FB-PR



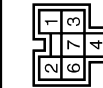
Terminal No.	Color of Wire	Signal Name [Specification]
14	P	CAN-L
30	SB	BLS
35	L	CAN-H

Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	V	-
4	Y	-
6	BR	-

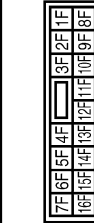
Terminal No.	Color of Wire	Signal Name [Specification]
1	O	-
2	L	-
3	LG	-

Terminal No.	Color of Wire	Signal Name [Specification]
1	R	IGNITION
2	L	ITS COMM-H
3	G	CAN-H
4	B	GND
5	P	ITS COMM-L
6	BR	CAN-L

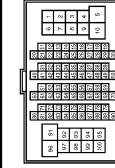
Connector No.	E81
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	M08FGY-R-US



Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	THR03FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
62	LG	-
63	L	-
64	O	-
65	G	-
66	BR	-
76	L	-
79	SB	-

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	G	-
4	G	-
6	W	-
7	L	-

Terminal No.	Color of Wire	Signal Name [Specification]
2F	W	-
4F	G	-
8F	L	-

Terminal No.	Color of Wire	Signal Name [Specification]
5	Y	-
10	BR	-
16	SB	-
17	L	-
18	P	-
19	G	-
47	L	-
48	P	-
58	O	-
60	V	-
61	P	-

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ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

INTELLIGENT CRUISE CONTROL (FULL SPEED RANGE)

Connector No.	E110
Connector Name	STOP LAMP SWITCH
Connector Type	MS04FW-LC



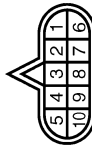
Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	SB	-
3	L	-
4	W	-

Connector No.	E114
Connector Name	ICC BRAKE SWITCH (WITH ICC)
Connector Type	MS2FBR-LC



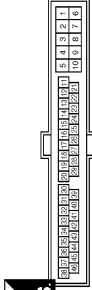
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
2	SB	-

Connector No.	F51
Connector Name	A-T ASSEMBLY
Connector Type	FK10FG-DGY



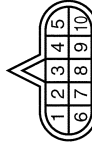
Terminal No.	Color of Wire	Signal Name [Specification]
3	L	-
8	P	-

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK36FW-NS10



Terminal No.	Color of Wire	Signal Name [Specification]
43	P	-
44	L	-

Connector No.	F151
Connector Name	TOM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



Terminal No.	Color of Wire	Signal Name [Specification]
3	R	CAN-H
8	BR	CAN-L

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS00FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
2A	G	-

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-GS



Terminal No.	Color of Wire	Signal Name [Specification]
3B	P	-
6B	Y	-

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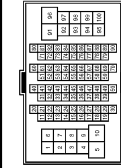
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

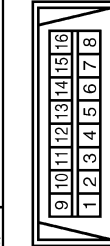
INTELLIGENT CRUISE CONTROL (FULL SPEED RANGE)

Connector No.	M16
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS1F-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
5	R	-
10	BR	-
16	BR	-
17	L	-
18	P	-
19	G	-
47	L	-
48	P	-
58	O	-
60	W	-
61	P	-

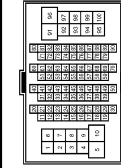
Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
12	P	-
13	L	-
14	P	-

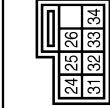
62	R	-
63	L	-
64	O	-
65	L	-
66	P	-
76	V	-
79	SB	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS1F-TM4



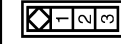
Terminal No.	Color of Wire	Signal Name [Specification]
80	L	-
81	P	-
82	L	-
83	P	-

Connector No.	M36
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-1V



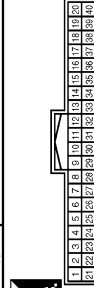
Terminal No.	Color of Wire	Signal Name [Specification]
25	SB	-
32	V	-

Connector No.	M17
Connector Name	ICC WARNING CHIME
Connector Type	AG8FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
3	W	-

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	LG	COMM (METER->AMP.)
3	GR	COMM (AMP->METER)
24	BR	COMM (LCD->AMP.)
25	Y	COMM (AMP->LCD)

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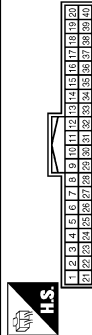
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

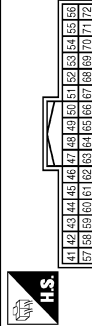
INTELLIGENT CRUISE CONTROL (FULL SPEED RANGE)

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH407V-NH



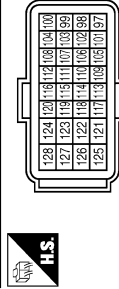
Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	COMM (AMP->METER)
14	BR	COMM (LCD->AMP)
27	LG	COMM (METER->AMP)
34	Y	COMM (AMP->LCD)

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH432FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
53	G	IGN
54	Y	BAT
55	B	GND
56	L	CAN-H
71	B	GND
72	P	CAN-L

Connector No.	M107
Connector Name	ECM (WITH VQ ENGINE)
Connector Type	BR424E-GY-PE26-R-LH-Z



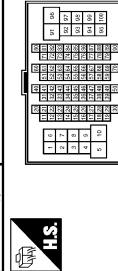
Terminal No.	Color of Wire	Signal Name [Specification]
101	SB	ASGDSW
108	V	GND A ASCD
113	P	VEHCAN-LI
114	L	VEHCAN-HI
122	P	BRAKE
126	BR	BNG SW

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK368MW-NS10



Terminal No.	Color of Wire	Signal Name [Specification]
43	P	
44	L	

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS11P-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	BR	-
31	W	-
32	W	-
33	SB	-
40	V	- [With ICC]
41	SB	-
42	W	-
43	P	- [With ICC]
44	R	-
45	L	- [With ICC]

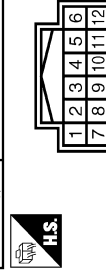
Terminal No.	Color of Wire	Signal Name [Specification]
46	O	- [With ICC]
47	L	- [With ICC]
48	P	- [With ICC]
50	G	- [With ICC]
77	LG	-

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH407B-NH



Terminal No.	Color of Wire	Signal Name [Specification]
90	P	CAN-L
91	L	CAN-H

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



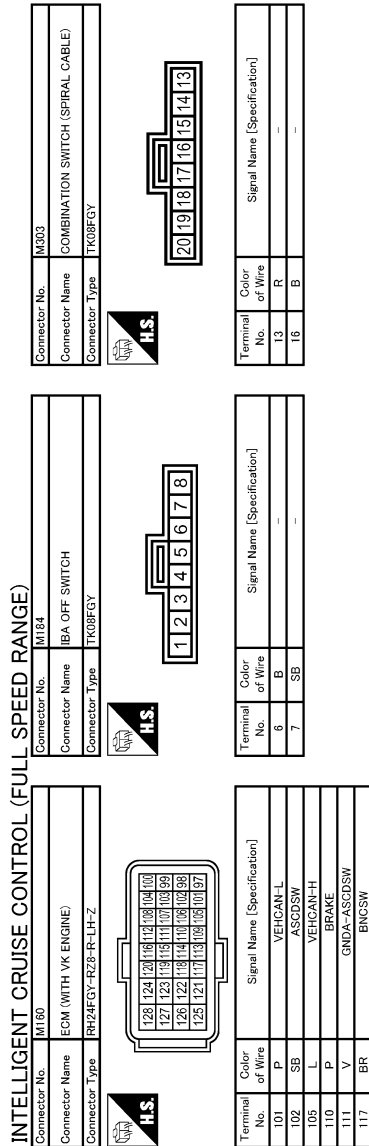
Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
4	L	CAN-H
6	L	CAN-H
7	P	CAN-L
10	P	CAN-L
12	P	CAN-L

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

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JCOWM0045GB

Fail-Safe

If a malfunction occurs in the system, a chime sounds a beep, and ICC sensor integrated unit cancels the control. Then the ICC system warning lamp in the combination meter illuminates.

DTC Inspection Priority Chart

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

P

INFOID:000000003902351

INFOID:000000003902352

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • C1A31: BCU INTERNAL MALF • C1F02: APA C/U MALF
3	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A08: PRESS SEN CIRCUIT • C1A09: BOOSTER SOL/V CIRC • C1A10: RELEASE SW CIRC • C1A11: PRESSURE CONTROL • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A21: UNIT HIGH TEMP • C1A22: BCU CIRCUIT • C1A24: NP RANGE • C1A28: BCU PWR SUPPLY CIR • C1A29: BCU PWR SUPPLY CIR2 • C1A30: BCU CAN COMM CIRC • C1A32: IBA FLAG STUCK • C1A33: CAN TRANSMISSION ERROR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR2 • C1A38: APA CAN CIR1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR • U0121: VDC CAN CIR2 • U0126: STRG SEN CAN CIR1 • U0129: BCU CAN CIR2 • U0401: ECM CAN CIR1 • U0402: TCM CAN CIR1 • U0415: VDC CAN CIR1 • U0418: BCU CAN CIR1 • U0428: STRG SEN CAN CIR2
4	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIRC
5	<ul style="list-style-type: none"> • C1A15: GEAR POSITION
6	<ul style="list-style-type: none"> • C1A00: CONTROL UNIT

DTC Index

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NOTE:

- The details of time display are as per the following.
 - CRNT: A malfunction is detected now
 - PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
 - 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
 - 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
 - If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

NOTE:

IBA system automatically returns to ON, when erasing self diagnosis result.

x: Applicable

DTC		CONSULT-III display	ICC system warning lamp	Fail-safe function			Reference
CONSULT-III	On board display			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	IBA system	
C1A00	0	CONTROL UNIT	x	x	x	x	CCS-52
C1A01	1	POWER SUPPLY CIR	x	x	x	x	CCS-54
C1A02	2	POWER SUPPLY CIR 2	x	x	x	x	CCS-54
C1A03	3	VHCL SPEED SE CIRC	x	x	x	x	CCS-56
C1A04	4	ABS/TCS/VDC CIRC	x	x	x	x	CCS-58
C1A05	5	BRAKE SW/STOP L SW	x	x	x	x	CCS-60
C1A06	6	OPERATION SW CIRC	x	x	x		CCS-65
C1A08	8	PRESS SEN CIRCUIT	x	x	x	x	CCS-68
C1A09	9	BOOSTER SOL/V CIRC	x	x	x	x	CCS-70
C1A10	10	RELEASE SW CIRC	x	x	x	x	CCS-73
C1A11	11	PRESSURE CONTROL	x	x	x	x	CCS-76
C1A12	12	LASER BEAM OFFCNTR	x	x		x	CCS-79
C1A13	13	STOP LAMP RLY FIX	x	x		x	CCS-80
C1A14	14	ECM CIRCUIT	x	x	x		CCS-87
C1A15	15	GEAR POSITION	x	x	x	x	CCS-89
C1A16	16	RADAR STAIN	x	x		x	CCS-92
C1A18	18	LASER AIMING INCOMP	x	x		x	CCS-94
C1A21	21	UNIT HIGH TEMP	x	x	x	x	CCS-96
C1A22	22	BCU CIRCUIT	x	x	x	x	CCS-98
C1A24	24	NP RANGE	x	x	x	x	CCS-102
C1A28	28	BCU PWR SUPPLY CIR	x	x	x	x	CCS-104
C1A29	29	BCU PWR SUPPLY CIR2	x	x	x	x	CCS-104
C1A30	30	BCU CAN COMM CIRC	x	x	x	x	CCS-106
C1A31	31	BCU INTERNAL MALF	x	x	x	x	CCS-107
C1A32	32	IBA FLAG STUCK	x	x	x	x	CCS-109
C1A33	33	CAN TRANSMISSION ERROR	x	x	x	x	CCS-111
C1A34	34	COMMAND ERROR	x	x	x	x	CCS-113
C1A35	35	APA CIR	x	x			CCS-266
C1A36	36	APA CAN COMM CIR	x	x			CCS-267
C1A37	133	APA CAN CIR2	x	x	x		CCS-269
C1A38	132	APA CAN CIR1	x	x	x		CCS-271
C1A39	39	STRG SEN CIR	x	x	x		CCS-115
C1A40	40	SYSTEM SW CIRC	x	x	x	x	CCS-117

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ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

DTC		CONSULT-III display	ICC system warning lamp	Fail-safe function			Reference
CONSULT-III	On board display			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	IBA system	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	—	—	—	—	—
C1F01	91	APA MOTOR MALF	×	×			CCS-279
C1F02	92	APA C/U MALF	×	×			CCS-281
C1F05	95	APA PWR SUPPLY CIR	×	×			CCS-284
U0121	127	VDC CAN CIR2	×	×	×	×	CCS-121
U0126	130	STRG SEN CAN CIR1	×	×	×		CCS-123
U0129	125	BCU CAN CIR2	×	×	×	×	CCS-125
U0401	120	ECM CAN CIR1	×	×	×	×	CCS-127
U0402	122	TCM CAN CIR1	×	×	×	×	CCS-129
U0415	126	VDC CAN CIR1	×	×	×	×	CCS-131
U0418	124	BCU CAN CIR1	×	×	×	×	CCS-133
U0428	131	STRG SEN CAN CIR2	×	×	×		CCS-135
U1000	100	CAN COMM CIRCUIT	×	×	×	×	CCS-137
U1010	110	CONTROL UNIT (CAN)	×	×	×	×	CCS-139

BRAKE BOOSTER CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

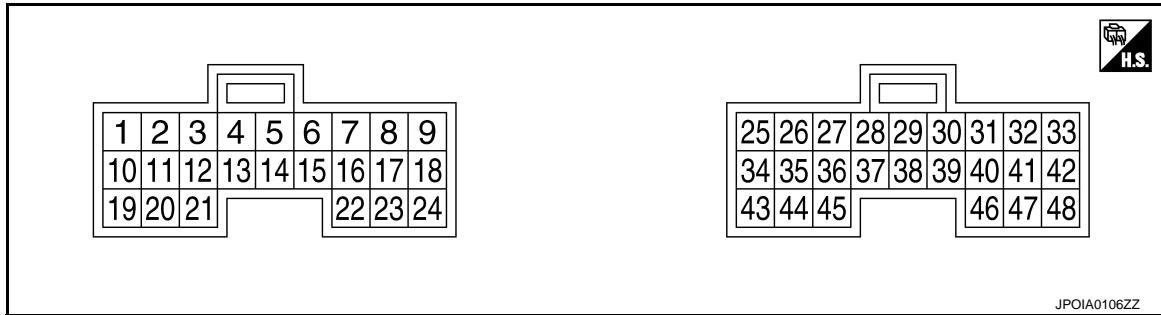
[ICC (FULL SPEED RANGE)]

BRAKE BOOSTER CONTROL UNIT

Reference Value

INFOID:000000003902354

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (W)	Ground	Battery power supply	—	Ignition switch OFF	—	Battery voltage
2 (W)		Battery power supply	—	Ignition switch OFF	—	Battery voltage
5 (P)		ITS communication-L	Input/ Output	—	—	—
6 (SB)		Release switch power supply	—	Ignition switch ON	—	10 V
8 (R)	24 (O)	Brake pressure sensor power supply	—	Ignition switch ON	—	5 V
9 (Y)	Ground	DCA switch	Input	Ignition switch ON	DCA switch pressed	0 V
					DCA switch not pressed	12 V
10 (G)		Booster solenoid pow- er supply	—	Ignition switch ON	—	12 V
12 (R)	Ground	Booster solenoid ground	Output	Ignition switch ON	At "BOOSTER SOL/V " test of "Active test"	
14 (L)		ITS communication-H	Input/ Output	—	—	—
15 (V)	24 (O)	Release switch (nor- mal close)	—	Ignition switch ON	Press the brake pedal.	0 V
					Brake pedal not depressed	10 V
17 (G)		Brake pressure sensor signal	Input	Ignition switch ON	Brake pedal not depressed	0.5 V
					Press the brake pedal.	0.5 - 3.5 V Note: The harder the brake is pressed, the higher the voltage.

BRAKE BOOSTER CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ICC (FULL SPEED RANGE)]

Terminal No. (Wire color)		Description		Condition		Value (Approx.)	
+	-	Signal name	Input/ Output				
19 (B)	Ground	Ground	—	Ignition switch ON	—	0 V	
20 (B)		Ground	—	Ignition switch ON	—	0 V	
21 (GR)		ICC warning chime signal	Output	Ignition switch ON	ICC warning chime not oper- ating		12 V
					ICC warning chime opera- tion		0 V
22 (BR)		Release switch (normal open)	Input	Ignition switch ON	Brake pedal depressed		10 V
					Brake pedal not depressed		0 V
24 (O)		Brake pressure sensor ground	—	—	—	—	—
33 (G)		Ignition power supply	—	Ignition switch ON	—		Battery voltage
40 (SB)		IBA OFF switch	Input	Ignition switch ON	IBA OFF switch pressed		0 V
					IBA OFF switch not pressed		12 V
42 (G)		Ignition power supply	—	Ignition switch ON	—		Battery voltage
46 (B)		Ground	—	Ignition switch ON	—		0 V
47 (LG)		ICC brake hold relay drive signal	Output	Ignition switch ON	—		0 V
	At "STOP LAMP" test of "Ac- tive test"					12 V	

SYMPTOM DIAGNOSIS

INTELLIGENT CRUISE CONTROL (FULL SPEED RANGE) SYSTEM SYMPTOMS

Symptom Table

INFOID:000000003902355

	Symptoms	Reference page
Operation	MAIN switch does not turn ON.	Refer to CCS-164, "Description" .
	MAIN switch does not turn OFF.	
	ICC system cannot be set (MAIN switch turns ON/OFF)	Refer to CCS-165, "Description" .
	CANCEL switch does not function.	Refer to CCS-167, "Description" .
	Resume does not function.	
	Set speed does not increase.	
	Set distance to a vehicle ahead cannot be changed.	
ICC is not canceled when the A/T selector lever is "N" position.	Refer to CCS-168, "Description" .	
Display/Chime	ICC system display not appear.	Refer to MWI-43, "Diagnosis Description" .
	Chime does not sound.	Refer to CCS-169, "Description" .
Control	Driving force is hunting.	Refer to CCS-171, "Description" .
Function to detect a vehicle ahead	System frequently cannot detect a vehicle ahead.	Refer to CCS-172, "Description" .
	Distance to detect a vehicle ahead is short.	
	System misidentifies a vehicle even though there is no vehicle ahead.	<ul style="list-style-type: none"> Adjust laser beam aiming: Refer to CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description". Perform ICC system action test. Refer to CCS-18, "ACTION TEST : Description".
	System misidentifies a vehicle in the next lane.	
	System does not detect a vehicle at all.	Refer to CCS-173, "Description" .

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MAIN SWITCH DOES NOT TURN ON, MAIN SWITCH DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

MAIN SWITCH DOES NOT TURN ON, MAIN SWITCH DOES NOT TURN OFF

Description

INFOID:000000003902356

MAIN switch does not turn ON

- ICC system display does not appear even when MAIN switch is pressed.

MAIN switch does not turn OFF

- When ICC system display is ON, display does not turn OFF even if MAIN switch is pressed.

NOTE:

When ICC system warning lamp illuminates, perform the self-diagnosis of ICC system, and then repair or replace the malfunctioning parts.

Diagnosis Procedure

INFOID:000000003902357

1.MAIN SWITCH INSPECTION

1. Start the engine.
2. Check that "MAIN SW" and "CRUISE LAMP" operate normally in "DATA MONITOR" of "ICC" with CONSULT-III.

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> GO TO 4.

2.CHECK UNIFIED METER AND A/C AMP.

Check that "CRUISE IND" operates normally in "DATA MONITOR" of "METER/M&A".

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> GO TO 4.

3.PERFORM SELF-DIAGNOSIS OF UNIFIED METER AND A/C AMP.

1. Perform "Self Diagnostic Result" of "METER/M&A".
2. Check if DTC is detected. Refer to [MWI-112, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> GO TO 4.

4.PERFORM SELF-DIAGNOSIS RESULTS OF ICC SYSTEM

1. Perform "All DTC Reading".
2. Check if the "U1000" is detected in self-diagnosis results of "ICC".

Is "U1000" detected?

- YES >> GO TO 5.
- NO >> GO TO 6.

5.CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).

>> INSPECTION END

6.CHECK ICC STEERING SWITCH

Check the ICC steering switch. Refer to [CCS-65, "Diagnosis Procedure"](#).

>> INSPECTION END

ICC SYSTEM CANNOT BE SET (MAIN SWITCH TURNS ON/OFF)

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

ICC SYSTEM CANNOT BE SET (MAIN SWITCH TURNS ON/OFF)

Description

INFOID:000000003902358

The MAIN switch can be turned ON/OFF, but the ICC system cannot be set even if the SET/COAST switch is pressed.

NOTE:

The system cannot be set in the following case.

- When the vehicle ahead is not detected below the speed of 32 km/h (20 MPH).
- When the selector lever is not in the “D”, “DS” position or manual mode.
- When the front wipers are operating at LO or HI.
(If the vehicle is equipped with a rain sensing auto-wiper, the system may cancel when the wipers are set to INT)
- When the brake pedal is depressed.
- When driving into a strong light (i.e., sunlight).
- When the snow mode switch is turned ON.
- When the VDC is turned OFF.
- When ABS or VDC (including the TCS) operates.
- When a wheel slips.

Diagnosis Procedure

INFOID:000000003902359

1. CHECK CAUSE OF AUTOMATIC CANCELLATION

Check if there is the cancellation cause in the “CAUSE OF AUTO-CANCEL” on “WORK SUPPORT” of “ICC” with CONSULT-III.

Is it displayed?

Not displayed >> GO TO 2.

“OPE SW VOLT CIRC” >> Refer to [CCS-65, "DTC Logic"](#).

“VHCL SPD UNMATCH” >> Refer to [CCS-56, "DTC Logic"](#).

“IGN LOW VOLT” >> Refer to [CCS-54, "DTC Logic"](#).

“ECM CIRCUIT” >> Refer to [CCS-87, "DTC Logic"](#).

“CAN COMM ERROR” >> Refer to [CCS-137, "DTC Logic"](#).

“ABS/TCS/VDC CIRC” >> Refer to [CCS-58, "DTC Logic"](#).

“BCU CIRCUIT” >> Refer to [CCS-98, "DTC Logic"](#).

2. PERFORM THE SELF-DIAGNOSIS

1. Perform “All DTC Reading”.
2. Check if any DTC is detected in “Self Diagnostic Result” of “ICC”. Refer to [CCS-158, "DTC Index"](#).

Is any DTC detected?

YES >> GO TO 3.

NO >> GO TO 4.

3. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts identified by the self-diagnosis result.

>> GO TO 6.

4. CHECK EACH SWITCH AND VEHICLE SPEED SIGNAL

1. Start the engine.
2. Check that the following items operate normally in “DATA MONITOR” of “ICC”.
 - “VHCL SPEED SE”
 - “D RANGE SW”
 - “SET/COAST SW”
 - “BRAKE SW”
 - “WIPER SW”
 - “PKB SW”

Is there a malfunctioning item?

All items are normal >> GO TO 5.

“VHCL SPEED SE” >> Refer to [CCS-56, "DTC Logic"](#).

ICC SYSTEM CANNOT BE SET (MAIN SWITCH TURNS ON/OFF)

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

"D RANGE SW">>Refer to [CCS-168, "Diagnosis Procedure"](#).

"SET/COAST SW">>Refer to [CCS-65, "DTC Logic"](#).

"BRAKE SW">>Refer to [CCS-60, "DTC Logic"](#).

"WIPER SW" (When the front wiper operation is normal)>>GO TO 5.

"WIPER SW" (When the front wiper operation is malfunctioning)>>Performs the diagnosis of the front wiper.

Refer to [WW-99, "WITH RAIN SENSOR : Symptom Table"](#) (With rain sensor) or [WW-101, "WITHOUT RAIN SENSOR : Symptom Table"](#) (Without rain sensor).

"PKB SW">>Refer to [MWI-70, "Diagnosis Procedure"](#).

5. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
2. Perform the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 6.

6. CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

ICC STEERING SWITCH (OTHER THAN MAIN SWITCH) DOES NOT FUNCTION

< SYMPTOM DIAGNOSIS > [ICC (FULL SPEED RANGE)]

ICC STEERING SWITCH (OTHER THAN MAIN SWITCH) DOES NOT FUNCTION

Description

INFOID:000000003902360

MAIN switch can be turned ON/OFF, but the operation of RESUME/ACCELERATE switch, CANCEL switch, and DISTANCE switch cannot be performed during ICC system operation.

NOTE:

Resume is not accepted when the following condition is met.

- When the MAIN switch is turned OFF once.

The set distance change is not accepted when any of the following condition is met.

- When the DCA system is turned ON.

Diagnosis Procedure

INFOID:000000003902361

1. CHECK EACH SWITCH

1. Start the engine.
2. Check that each switch operates normally on "DATA MONITOR" of "ICC" with CONSULT-III.
 - "RESUME/ACC SW"
 - "CANCEL SW"
 - "DISTANCE SW"

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2. PERFORM ALL OF THE SELF-DIAGNOSIS ITEMS

1. Perform "All DTC Reading".
2. Check if the "U1000" is detected in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

YES >> GO TO 3.

NO >> GO TO 4.

3. CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to [CCS-137. "DTC Logic"](#).

>> INSPECTION END

4. CHECK ICC STEERING SWITCH

Check the ICC steering switch. Refer to [CCS-66. "Component Inspection"](#).

>> GO TO 6.

5. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-180. "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 6.

6. CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

ICC SYSTEM DOES NOT CANCEL WHEN A/T SELECTOR LEVER SETS ON "N"
< SYMPTOM DIAGNOSIS > [ICC (FULL SPEED RANGE)]

ICC SYSTEM DOES NOT CANCEL WHEN A/T SELECTOR LEVER SETS ON "N"

Description

INFOID:000000003902362

The ICC system is not canceled even when the A/T selector lever is shifted to the N position while the ICC system is active.

Diagnosis Procedure

INFOID:000000003902363

1. CHECK D RANGE SWITCH

Check if "D RANGE SW" operates normally in "DATA MONITOR" of "ICC" with CONSULT-III.

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> GO TO 2.

2. PERFORM ALL SELF-DIAGNOSIS ITEMS

1. Perform "All DTC Reading".
2. Check if the "U1000" is detected in "self-diagnosis results" of "ICC".

Is "U1000" detected?

- YES >> GO TO 3.
- NO >> GO TO 4.

3. CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).

>> INSPECTION END

4. CHECK POSITION SWITCH

Check if "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> GO TO 5.

5. PERFORM TCM SELF-DIAGNOSIS

1. Perform the "Self Diagnostic Result" of "TRANSMISSION".
2. Repair or replace malfunctioning parts. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).

>> GO TO 7.

6. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
2. Perform the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 7.

7. CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

CHIME DOES NOT SOUND

Description

INFOID:000000003902364

Symptom check: In the following conditions, the warning chime may not sound even if the vehicle distance is short.

- When the vehicles are traveling at the same speed and the distance between vehicles is not changing.
- When the vehicle ahead is traveling faster and the distance between vehicles is increasing.
- The warning chime will not sound when the accelerator pedal is depressed, overriding the system.
- The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.
- The warning chime does not sound when the system does not detect any vehicle ahead. (Diagnose the conditions under which the system is detecting the vehicle ahead and when the system is malfunctioning. If there is any malfunction in detecting the vehicle ahead, check the system following the [CCS-172, "Description"](#).)

Diagnosis Procedure

INFOID:000000003902365

1.PERFORM ACTIVE TEST

Check if the warning chime sounds on the active test item "ICC BUZZER" of "ICC" with CONSULT-III.

Does the warning chime sound?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK THE MALFUNCTION SYMPTOM DURING WARNING CHIME OPERATION

1. Understand the vehicle ahead detecting condition when the malfunction occurred. If the warning chime should have sounded, replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 8.

3.CHECK ICC WARNING CHIME CIRCUIT

Check the ICC warning chime circuit. Refer to [CCS-142, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 6.

4.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if the "U1000" is detected in self-diagnosis results of "ICC".

Is "U1000" detected?

YES >> GO TO 5.

NO >> GO TO 7.

5.CAN COMMUNICATIONS SYSTEM INSPECTION

Check the CAN communication system and repair or replace malfunctioning parts. Refer to [CCS-137, "DTC Logic"](#).

>> INSPECTION END

6.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

>> GO TO 8.

7.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

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CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

>> GO TO 8.

8. CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

DRIVING FORCE IS HUNTING

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

DRIVING FORCE IS HUNTING

Description

INFOID:000000003902366

The vehicle causes hunting when the ICC system is active.

Diagnosis Procedure

INFOID:000000003902367

1.PERFORM SELF-DIAGNOSIS OF ECM

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if the DTC is detected in self-diagnosis results of "ENGINE". Refer to [EC-542. "DTC Index"](#) (VQ35HR) or [EC-1172. "DTC Index"](#) (VK50VE).

Is any DTC detected?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK ICC SENSOR INTEGRATED UNIT BODY WINDOW

1. Check the vehicle driving conditions. Refer to [CCS-172. "Description"](#).
2. Check the ICC sensor integrated unit body window for contamination, foreign materials, or cracks. Refer to [CCS-172. "Diagnosis Procedure"](#).

>> INSPECTION END

3.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts identified by the self-diagnosis result.

>> GO TO 4.

4.CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

Description

INFOID:000000003902368

The detection function may become unstable in the following cases.

- When the reflector of the vehicle ahead is deficient/ not clean enough to reflect the radar.
- When driving a road with extremely sharp corners.
- When the sensor cannot detect the reflector of the vehicle ahead as the vehicle ahead is passing a hill or passing the peak.

Diagnosis Procedure

INFOID:000000003902369

1.VISUAL CHECK (1)

Check ICC sensor integrated unit body window for contamination and/or foreign materials.

Do foreign materials adhere?

- YES >> GO TO 2.
- NO >> GO TO 3.

2.WIPE OUT DIRT AND FOREIGN MATERIALS

Wipe out the contamination and/or foreign materials from the ICC sensor integrated unit body window.

>> GO TO 6.

3.VISUAL CHECK (2)

Check ICC sensor integrated unit body window for cracks and scratches.

Are there any cracks or scratches?

- YES >> GO TO 5.
- NO >> GO TO 4.

4.ADJUST LASER BEAM AIMING

1. Adjust the laser beam aiming. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).
2. Perform ICC system action test. Refer to [CCS-18. "ACTION TEST : Description"](#).
3. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END
- NO >> GO TO 5.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-180. "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 6.

6.CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18. "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

INFOID:000000003902370

When ICC system is active, the ICC system does not perform any control even through there is a vehicle ahead.

Diagnosis Procedure

INFOID:000000003902371

1. CHECK ICC SYSTEM DISPLAY ON MULTI INFORMATION DISPLAY

1. Start the self-diagnosis mode of combination meter. Refer to [MWI-43, "Diagnosis Description"](#).
2. Check that the multi information display turns on normally.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace the combination meter.

2. VISUAL CHECK (1)

Check ICC sensor integrated unit body window for contamination and/or foreign materials.

Do foreign materials adhere?

- YES >> GO TO 3.
NO >> GO TO 4.

3. WIPE OUT DIRT AND FOREIGN MATERIALS

Wipe out the contamination and/or foreign materials from the ICC sensor integrated unit body window.

>> GO TO 7.

4. VISUAL CHECK (2)

Check ICC sensor integrated unit body window for cracks and/or scratches.

Are there cracks?

- YES >> GO TO 6.
NO >> GO TO 5.

5. LASER BEAM AIMING ADJUSTMENT

1. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).
2. Perform ICC system action test. Refer to [CCS-18, "ACTION TEST : Description"](#).
3. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END
NO >> GO TO 6.

6. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-180, "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 7.

7. CHECK ICC SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-18, "ACTION TEST : Description"](#) for action test.)
2. Check that the ICC system is normal.

>> INSPECTION END

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

NORMAL OPERATING CONDITION

Description

INFOID:000000003902372

PRECAUTIONS FOR VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE

CAUTION:

- ICC system is only an aid to assist the driver and is not a collision warning or avoidance device. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- The system is primarily intended for use on straight, dry, open roads with light traffic. It is not advisable to use the system in city traffic or congested areas.
- This system will not adapt automatically to road conditions. This system should be used in evenly flowing traffic. Do not use the system on roads with sharp curves, or on icy roads, in heavy rain or in fog.
- The distance sensor will not detect under most conditions.
 - Stationary and slow moving vehicles.
 - Pedestrians or objects in the roadway.
 - Oncoming vehicles in the some lane.
 - Motorcycles traveling offset in the travel lane.
- As there is a performance limit to the distance control function, never rely solely on the ICC system. This system does not correct careless, inattentive or absent-minded driving, or overcome poor visibility in rain, fog, or other bad weather. Decelerate the vehicle speed by depressing the brake pedal, depending on the distance to the vehicle ahead and the surrounding circumstances in order to maintain a safe distance between vehicles.
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill and sound a warning chime. To prevent the vehicle from moving, the driver must depress the brake pedal.
- The system may not detect the vehicle in front of the driver in certain road or weather conditions. To avoid accidents, never use the ICC system under the following conditions:
 - On roads where the traffic is heavy or there are sharp curves.
 - On slippery road surfaces such as on ice or snow, etc.
 - During bad weather (rain, fog, snow, etc.)
When the front wiper is operated at the low speed (LO) or high speed (HI) position, the ICC system is automatically canceled.
 - When strong light (for example, at sunrise or sunset) is directly shining on the front of the vehicle.
 - When rain, snow or dirt adhere to the system sensor.
 - On steep downhill roads (the vehicle may go beyond the set vehicle speed and frequent braking may result in overheating the brakes).
 - On repeated uphill and downhill roads.
 - When traffic conditions make it difficult to keep a proper distance between vehicles because of frequent acceleration or deceleration.
- Do not use the ICC system if own vehicle is towing a trailer. The system may not detect a vehicle ahead.
- In some road or traffic conditions, a vehicle or object can unexpectedly come into the sensor detection zone and cause automatic braking. The driver may need to control the distance from other vehicles using the accelerator pedal. Always stay alert and avoid using the ICC system when it is not recommended in this section.
- The vehicle-to-vehicle distance control mode uses a sensor located on the front of the vehicle to detect vehicles traveling ahead. The sensor generally detects the signals returned from the reflectors on a vehicle ahead. Therefore, if the sensor cannot detect the reflector on the vehicle ahead, the ICC system may not maintain the selected distance.
- The following are some conditions in which the sensor cannot detect the signals:
 - When the reflector of the vehicle ahead is positioned high on the vehicle (trailer, etc.).
 - When the reflector on the vehicle ahead is missing, damaged or covered.
 - When the reflector of the vehicle ahead is covered with dirt, snow and road spray.
 - When the snow or road spray from traveling vehicles reduces the sensor's visibility.
 - When dense exhaust or other smoke (black smoke) from vehicles reduces the sensor's visibility.
 - When excessively heavy baggage is loaded in the rear seat or the luggage room of own vehicle.
- The ICC system is designed to automatically check the sensor's operation within the limitation of the system. When the sensor is covered with dirt or is obstructed, the system will automatically be canceled. If the sensor is covered with ice, a transparent or translucent vinyl bag, etc., the ICC system may not detect them. In these instances, the vehicle-to-vehicle distance control mode may not can-

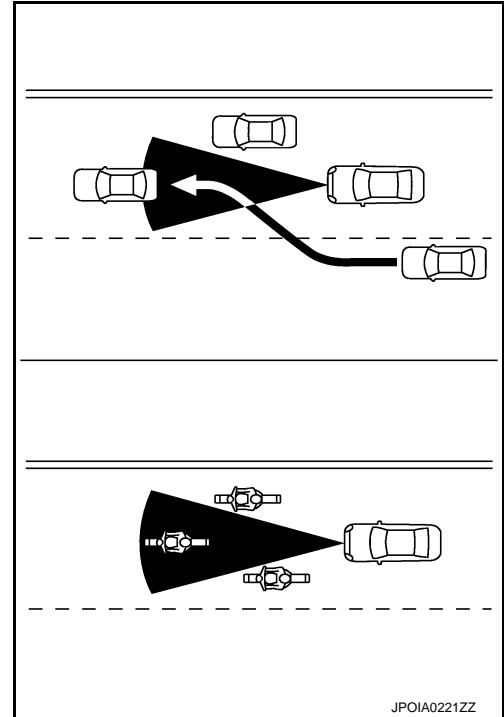
NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

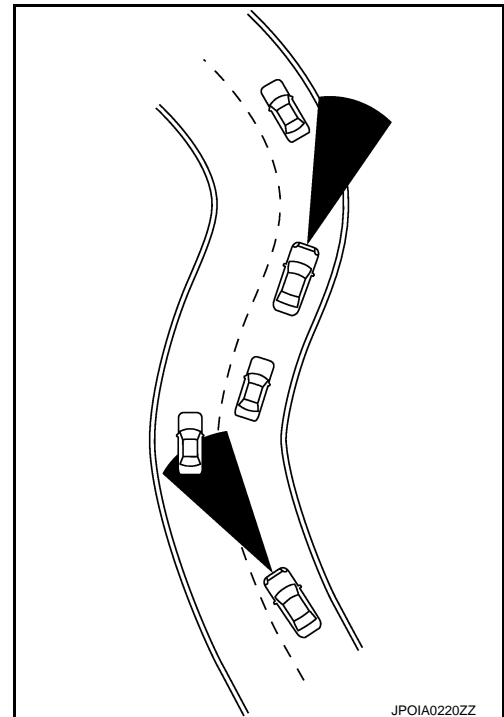
[ICC (FULL SPEED RANGE)]

cel and may not be able to maintain the selected following distance from the vehicle ahead. Be sure to check and clean the sensor regularly.

- The ICC system does not control vehicle speed or warn the driver when own vehicle approaches stationary and slow moving vehicles. The driver must pay attention to vehicle operation to maintain proper distance from vehicles ahead when approaching toll gates or traffic congestion.
- The detection zone of the ICC sensor is limited. A vehicle ahead must be in the detection zone for the vehicle-to-vehicle distance detection mode to maintain the selected distance from the vehicle ahead. A vehicle ahead may move outside of the detection zone due to its position within the same lane of travel. Motorcycles may not be detected in the same lane ahead if they are traveling offset from the center line of the lane. A vehicle that is entering the lane ahead may not be detected until the vehicle has completely moved into the lane. If this occurs, the ICC system may warn the driver by blinking the system indicator and sounding the chime. The driver may have to manually control the proper distance away from vehicle traveling ahead.



- When driving on some roads, such as winding, hilly, curved, narrow roads, or roads which are under construction, the ICC sensor may detect vehicles in a different lane, or may temporarily not detect a vehicle traveling ahead. This may cause the ICC system to decelerate or accelerate the vehicle. The detection of vehicles may also be affected by vehicle operation (steering maneuver or traveling position in the lane, etc.) or vehicle condition. If this occurs, the ICC system may warn the driver by blinking the system indicator and sounding the chime unexpectedly. The driver will have to manually control the proper distance away from the vehicle traveling ahead.



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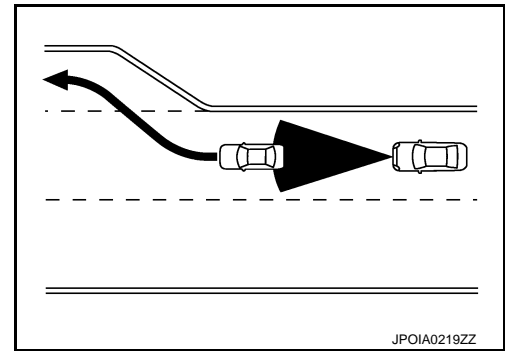
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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[ICC (FULL SPEED RANGE)]

- When driving on the freeway at a set speed and approaching a slower traveling vehicle ahead, the ICC will adjust the speed to maintain the distance, selected by the driver, from the vehicle ahead. If the vehicle ahead changes lanes or exits the freeway, the ICC system will accelerate and maintain the speed up to the set speed. Pay attention to the driving operation to maintain control of the vehicle as it accelerates to the set speed. The vehicle may not maintain the set speed on winding or hilly roads. If this occurs, the driver will have to manually control the vehicle speed.



- The sensor sensitivity can be affected by vehicle operation (steering maneuver or driving position in the lane) or traffic or vehicle condition (for example, if a vehicle is being driven with some damage).
- Normally when controlling the distance to a vehicle ahead, this system automatically accelerates or decelerates own vehicle according to the speed of the vehicle ahead. Depress the accelerator to properly accelerate own vehicle when acceleration is required for a lane change. Depress the brake pedal when deceleration is required to maintain a safe distance to the vehicle ahead due to its sudden braking or if a vehicle cuts in. Always stay alert when using the ICC system.

PRECAUTIONS FOR CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE

CAUTION:

- In the conventional (fixed speed) cruise control mode, a warning chime does not sound to warn the driver if own vehicle is too close to the vehicle ahead, as neither the presence of the vehicle ahead nor the vehicle-to-vehicle distance is detected.
- Pay special attention to the distance between own vehicle and the vehicle ahead or a collision could occur.
- Always confirm the setting in the ICC system display.
- Do not use the conventional (fixed speed) cruise control mode when driving under the following conditions:
 - when it is not possible to keep the vehicle at a set speed.
 - in heavy traffic or in traffic that varies in speed.
 - on winding or hilly roads.
 - on slippery roads (rain, snow, ice, etc.).
 - in very windy areas.
- Doing so could cause a loss of vehicle control and result in an accident.
- To avoid accidentally engaging cruise control, make sure to the MAIN switch OFF when not using ICC system.

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000003902706

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions For Harness Repair

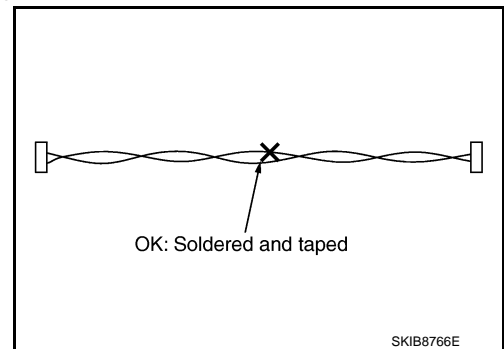
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ITS communication uses a twisted pair line. Be careful when repairing it.

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

A fray of twisted lines must be within 110 mm (4.33 in).



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PRECAUTIONS

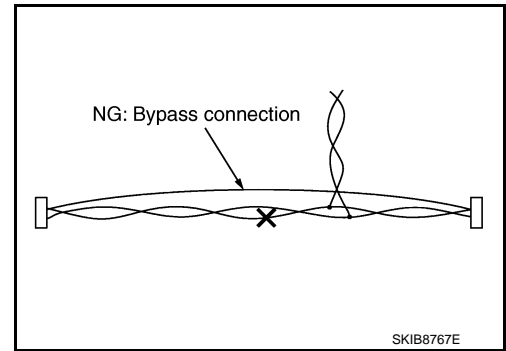
< PRECAUTION >

[ICC (FULL SPEED RANGE)]

- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



ICC System Service

INFOID:000000003902375

CAUTION:

- Never look straight into the laser beam discharger when adjusting laser beam aiming.
- Turn the MAIN switch OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Never use the ICC sensor integrated unit removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of ICC system, then check the operation of ICC system after adjusting laser beam aiming if necessary.

PREPARATION

< PREPARATION >

[ICC (FULL SPEED RANGE)]

PREPARATION

PREPARATION

Special Service Tools

INFOID:000000003941591

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV99110100 (J-45718) ICC target board	Uses for laser beam aiming adjustment



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ICC SENSOR INTEGRATED UNIT

< REMOVAL AND INSTALLATION >

[ICC (FULL SPEED RANGE)]

REMOVAL AND INSTALLATION

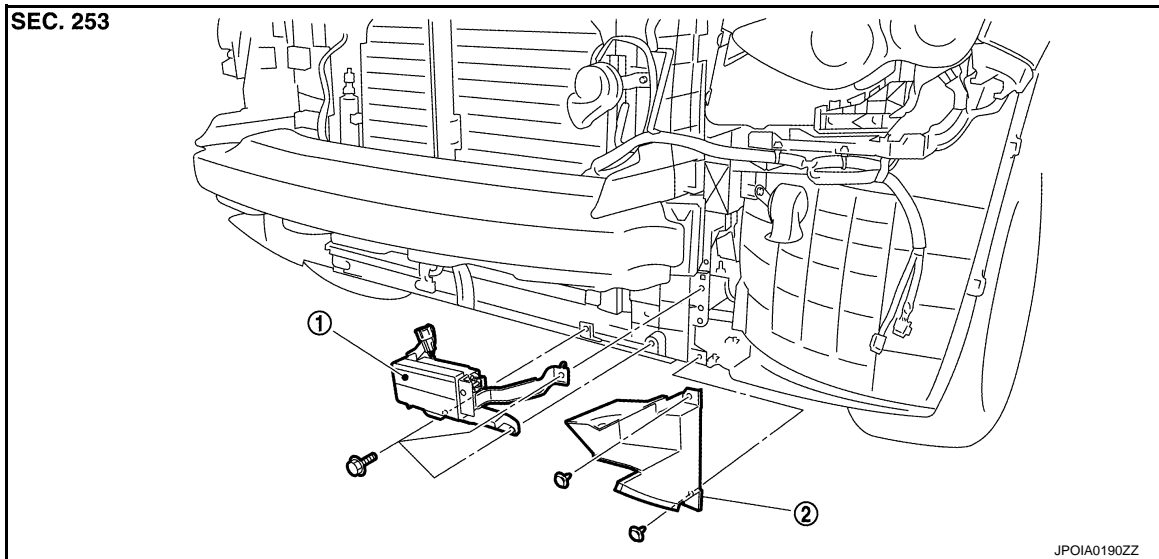
ICC SENSOR INTEGRATED UNIT

Exploded View

INFOID:000000003902377

CAUTION:

Always perform the laser beam aiming adjustment and check the operation after the replacement, removal and installation of ICC sensor integrated unit.



1. ICC sensor integrated unit
2. Air guide lower (LH)

Removal and Installation

INFOID:000000003902378

REMOVAL

1. Remove front bumper fascia. Refer to [EXT-12. "Exploded View"](#).
2. Remove air guide lower (LH). Refer to [DLK-232. "Exploded View"](#).
3. Disconnect ICC sensor integrated unit connector.
4. Remove mounting bolts from ICC sensor integrated unit.
5. Remove ICC sensor integrated unit.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Always perform the laser beam aiming adjustment and check the operation after the replacement, removal, and installation of ICC sensor integrated unit. Refer to [CCS-13. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ICC SENSOR INTEGRATED UNIT\) : Description"](#).

BRAKE BOOSTER CONTROL UNIT

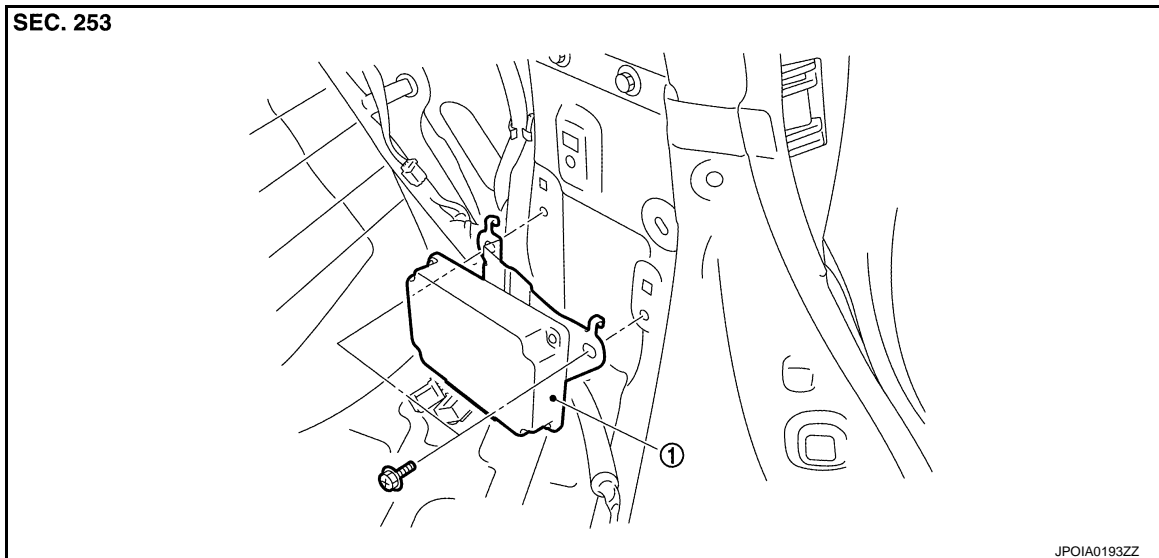
< REMOVAL AND INSTALLATION >

[ICC (FULL SPEED RANGE)]

BRAKE BOOSTER CONTROL UNIT

Exploded View

INFOID:000000003902379



1. Brake booster control unit

Removal and Installation

INFOID:000000003902380

REMOVAL

1. Remove clips on the back of the luggage side finisher lower (RH) to obtain space for work. Refer to [INT-28, "Exploded View"](#).
2. Disconnect brake booster control unit connector.
3. Remove mounting bolts from brake booster control unit.
4. Remove brake booster control unit.

INSTALLATION

Install in the reverse order of removal.

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ICC WARNING CHIME

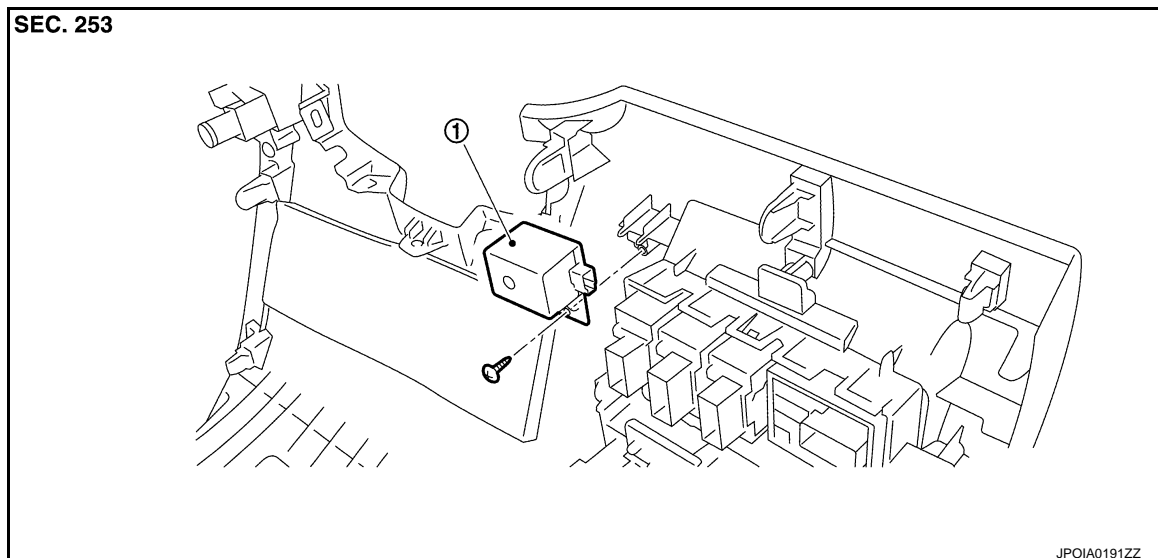
< REMOVAL AND INSTALLATION >

[ICC (FULL SPEED RANGE)]

ICC WARNING CHIME

Exploded View

INFOID:000000003902381



1. ICC warning chime

Removal and Installation

INFOID:000000003902382

REMOVAL

1. Remove the instrument lower panel LH. Refer to [IP-11. "Exploded View"](#).
2. Remove mounting screw from ICC warning chime.
3. Remove ICC warning chime from the instrument lower panel LH.

INSTALLATION

Install in the reverse order of removal.

ICC STEERING SWITCH

< REMOVAL AND INSTALLATION >

[ICC (FULL SPEED RANGE)]

ICC STEERING SWITCH

Exploded View

INFOID:000000003902383

Refer to [SR-5. "Exploded View"](#).

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DIAGNOSIS AND REPAIR WORK FLOW

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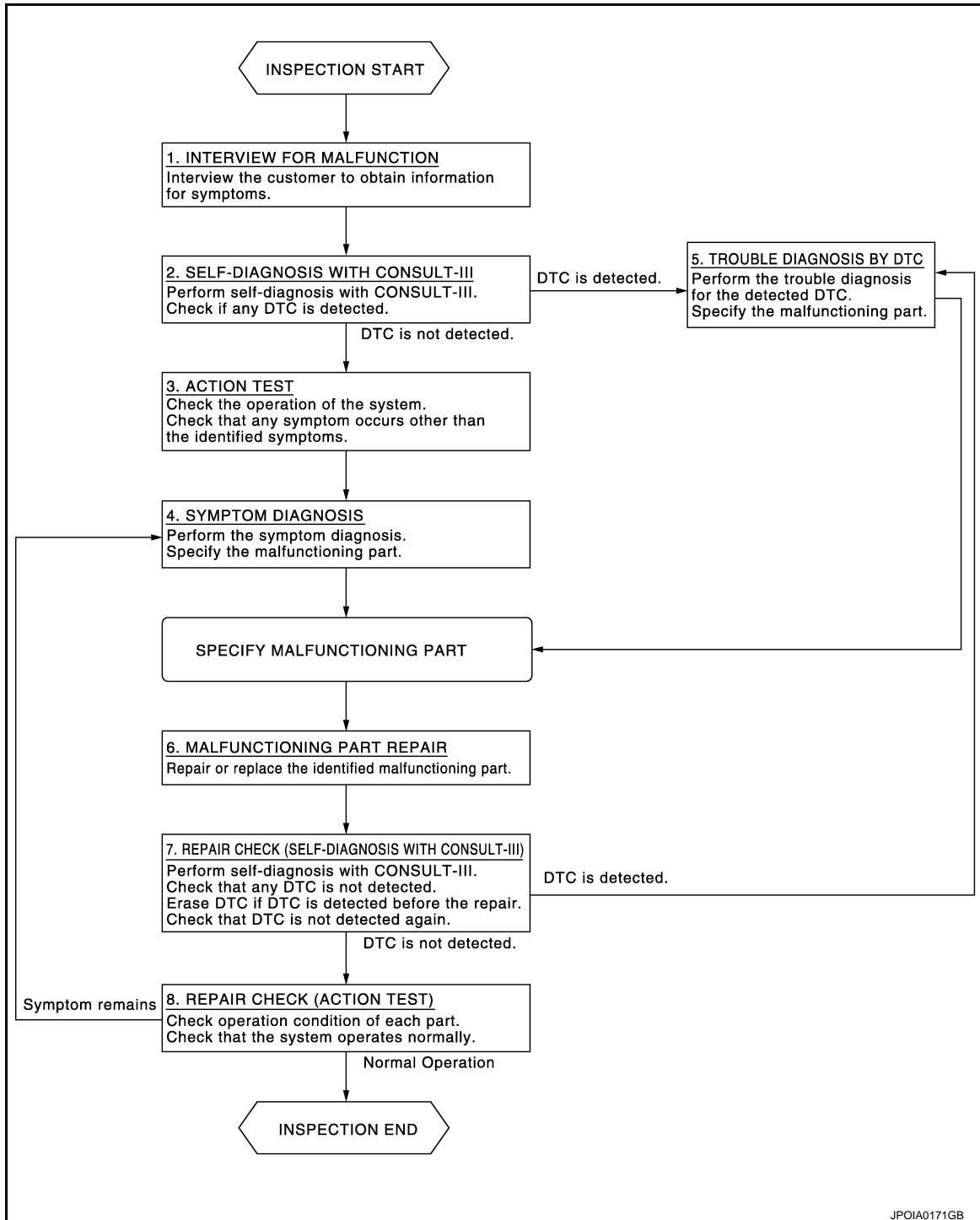
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000003902384

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

NOTE:

DIAGNOSIS AND REPAIR WORK FLOW

[DCA]

< BASIC INSPECTION >

The customers are not professionals. Never assume that “maybe the customer means...” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2. SELF-DIAGNOSIS WITH CONSULT-III

1. Perform “All DTC Reading” with CONSULT-III.
2. Check if the DTC is detected on the self-diagnosis results of “ICC” and/or “ACCELE PEDAL ACT”.

Is any DTC detected?

- YES >> GO TO 5.
NO >> GO TO 3.

3. ACTION TEST

Perform DCA system action test to check the operation status. Refer to [CCS-187. "ACTION TEST : Description"](#).

Check if any other malfunctions occur.

>> GO TO 4.

4. SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to [CCS-348. "Symptom Table"](#).

>> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

1. Check the DTC in the self-diagnosis results.
2. Perform trouble diagnosis for the detected DTC. Refer to [CCS-330. "DTC Index"](#) (ICC) and/or [CCS-347. "DTC Index"](#) (ACCELE PEDAL ACT).

NOTE:

If “DTC: U1000” is detected, first diagnose the CAN communication system or ITS communication system.

>> GO TO 6.

6. MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 7.

7. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

1. Erases self-diagnosis results.
2. Perform “All DTC Reading” again after repairing or replacing the specific items.
3. Check if any DTC is detected in self-diagnosis results of “ICC” and “ACCELE PEDAL ACT”.

Is any DTC detected?

- YES >> GO TO 5.
NO >> GO TO 8.

8. REPAIR CHECK (ACTION TEST)

Perform the DCA system action test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there a malfunction symptom?

- YES >> GO TO 4.
NO >> INSPECTION END

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CCS

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[DCA]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ICC SENSOR INTEGRATED UNIT)

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ICC SENSOR INTEGRATED UNIT) : Description

INFOID:000000003902385

- Always perform the laser beam aiming adjustment after removing and installing or replacing the ICC sensor integrated unit.

CAUTION:

The system does not operate normally unless the laser beam aiming adjustment is performed. Always perform it.

- Perform the DCA system action test check that the DCA system operates normally.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ICC SENSOR INTEGRATED UNIT) : Special Repair Requirement

INFOID:000000003902386

1.LASER BEAM AIMING ADJUSTMENT

Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.DCA SYSTEM ACTION TEST

1. Perform the DCA system action test. Refer to [CCS-187, "ACTION TEST : Description"](#).
2. Check that the DCA system operates normally.

>> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ACCELERATOR PEDAL ASSEMBLY)

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ACCELERATOR PEDAL ASSEMBLY) : Description

INFOID:000000003902387

- Always perform accelerator pedal released position learning when replacing the accelerator pedal assembly or disconnecting the accelerator pedal position sensor connector.
- Perform the DCA system action test check that the DCA system operates normally.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ACCELERATOR PEDAL ASSEMBLY) : Special Repair Requirement

INFOID:000000003902388

1.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform accelerator pedal released position learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 2.

2.DCA SYSTEM ACTION TEST

1. Perform the DCA system action test. Refer to [CCS-187, "ACTION TEST : Description"](#).
2. Check that the DCA system operates normally.

>> INSPECTION END

ACTION TEST

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[DCA]

ACTION TEST : Description

INFOID:000000003902389

Always perform the DCA system action test to check that the system operates normally after replacing the ICC sensor integrated unit, replacing the accelerator pedal assembly, or repairing any DCA system malfunction.

CAUTION:

Perform the DCA system action test after checking that the ICC system operates normally because the DCA system shares components with the ICC system.

ACTION TEST : Special Repair Requirement (Distance Control Assist)

INFOID:000000003902390

NOTE:

When the ICC system is set, the information display changes to the ICC system display.

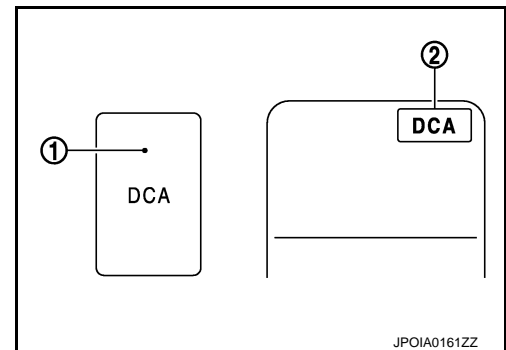
1. ICC SYSTEM ACTION TEST

Perform the ICC system action test. Refer to [CCS-18, "ACTION TEST : Description"](#).

>> GO TO 2.

2. CHECK DCA SWITCH

1. Start the engine.
2. After starting engine wait for 5 seconds or more.
3. Press the DCA switch (1).
4. Check that the DCA system switch indicator (2) on the information display illuminates.
5. Check that the DCA system switch indicator turns off when the system is turned OFF by pressing the DCA switch.
6. Check that the DCA system switch indicator turns OFF when the engine starts again.



NOTE:

The DCA system switch indicator does not illuminate even if the DCA switch is turned ON within approximately 5 seconds after starting the engine.

If the accelerator pedal assembly is not replaced>>INSPECTION END

If the accelerator pedal assembly is replaced>>GO TO 3.

3. CHECK DCA SYSTEM OPERATION

Check that the accelerator pedal actuator operates by the "Active Test" items "ACCELERATOR PEDAL ACTUATOR TEST1" and "ACCELERATOR PEDAL ACTUATOR TEST2" of "ACCELE PEDAL ACT" with CONSULT-III.

>> INSPECTION END

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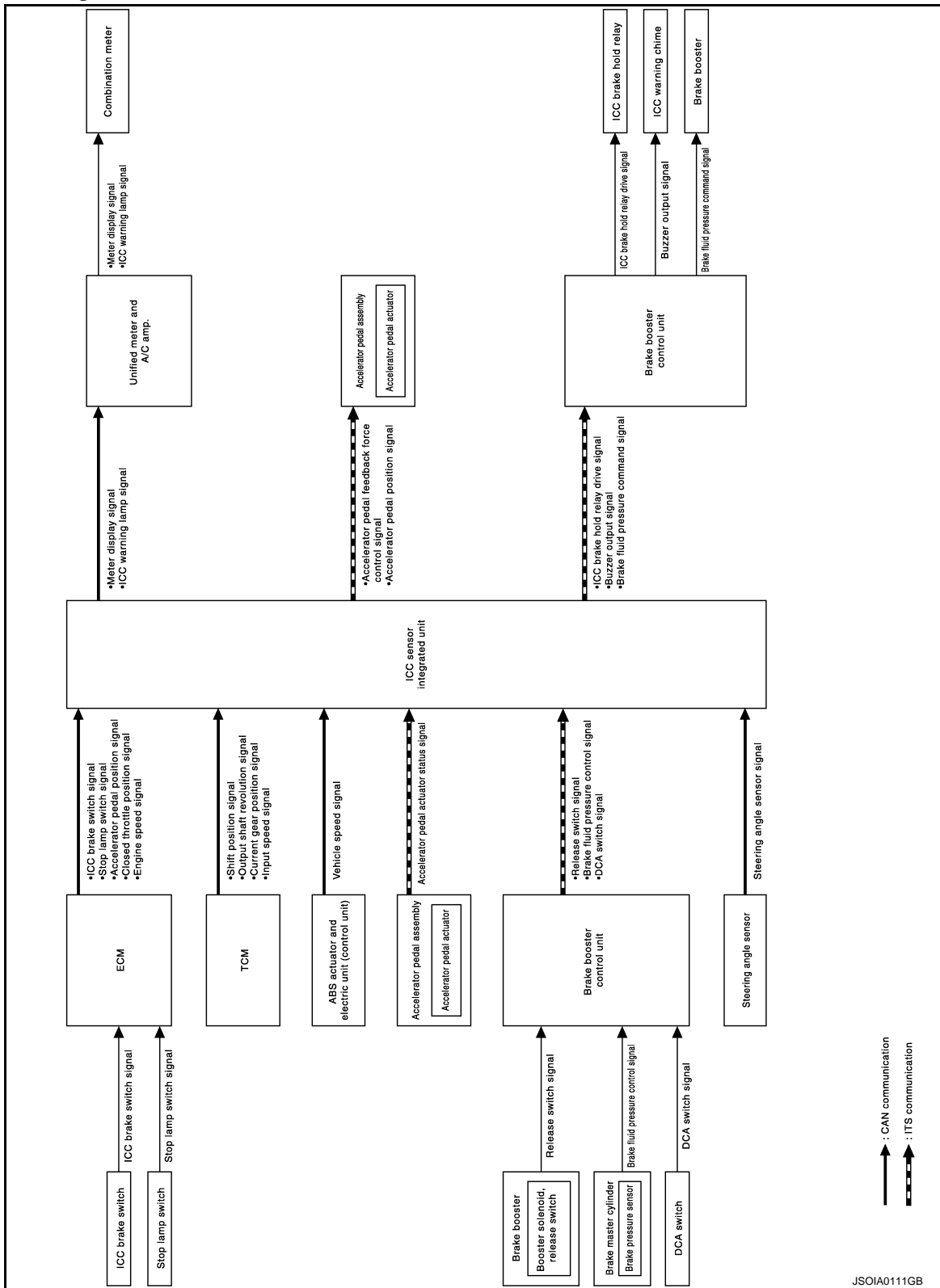
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SYSTEM DESCRIPTION

DISTANCE CONTROL ASSIST SYSTEM

System Diagram

INFOID:000000003902391



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System Description

INFOID:000000003902392

FUNCTION DESCRIPTION

DISTANCE CONTROL ASSIST SYSTEM

[DCA]

< SYSTEM DESCRIPTION >

When a vehicle is detected ahead

- The vehicle ahead detection indicator comes on.

When vehicle approaches a vehicle ahead

- If the driver is not depressing the accelerator pedal, the system activates the brakes to decelerate smoothly as necessary. If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system.
- If the driver is depressing the accelerator pedal, the system moves the accelerator pedal upward to assist the driver to release the accelerator pedal.

When brake operation by driver is required

- The system alerts the driver by a warning chime and blinking the vehicle ahead detection indicator. If the driver is depressing the accelerator pedal after the warning, the system moves the accelerator pedal upward to assist the driver to switch to the brake pedal.

CAUTION:

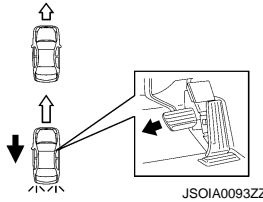
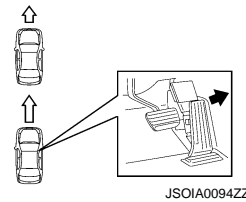
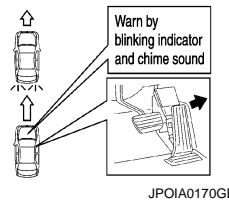
If the vehicle ahead comes to a standstill, the vehicle decelerates to a standstill within the limitations of the system. The system will release brake control with a warning chime once it judges the vehicle is at a standstill. To prevent the vehicle from moving, the driver must depress the brake pedal. [The system will resume control automatically once the system reaches 5 km/h (3 MPH)].

NOTE:

- Depending on the position of the accelerator pedal, the system may not be able to assist the driver to release the accelerator pedal appropriately.
- When the driver depresses the accelerator pedal even further while the system is moving the accelerator pedal upward, the accelerator pedal control will be canceled.
- When the driver is depressing the accelerator pedal, the brake control by the system is not operated.
- When the driver is depressing the brake pedal, neither the brake control nor the alert by the system operates.
- When the ICC system is set, the DCA system will be canceled.

OPERATION DESCRIPTION

Calculate the distance and relative speed with the vehicle ahead by ICC sensor integrated unit. Control the accelerator pedal actuator and brake booster control unit based on the calculated value via ITS communication.

When vehicle approaches a vehicle ahead	If the driver is not depressing the accelerator pedal, the system activates the brakes to decelerate smoothly as necessary.	
When vehicle approaches a vehicle ahead	If the driver is depressing the accelerator pedal, the system moves the accelerator pedal upward to assist the driver to release the accelerator pedal.	
When brake operation by driver is required	The system alerts the driver by a warning chime and blinking the vehicle ahead detection indicator. If the driver is depressing the accelerator pedal after the warning, the system moves the accelerator pedal upward to assist the driver to switch to the brake pedal.	

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DISTANCE CONTROL ASSIST SYSTEM

< SYSTEM DESCRIPTION >

[DCA]

Deceleration control	It transmits the brake fluid pressure command signal to the brake booster control unit via ITS communication and performs the brake control.
Accelerator pedal actuation control	It transmits the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication and controls the accelerator pedal in the upward direction.

Operation Condition

ICC sensor integrated unit performs the control when the following conditions are satisfied.

- When the DCA switch is turned to ON.
- When the brake pedal is not depressed.
- When the vehicle speed is above approximately 5 km/h (3 MPH).
- When the vehicle ahead is detected.
- When the ICC system is not set.

No Operation Condition

The ICC sensor integrated unit is not operate when the system is under any conditions of the no operation condition.

- When the brake pedal depressed.
- When the ICC system is set.
- When the system judges that the vehicle comes to a standstill by the system control.
- When the vehicle ahead is not detected.

Operation Cancellation Condition

The ICC sensor integrated unit cancels the operation when the system is under any conditions of the operation cancellation condition.

- When the DCA switch is turned to OFF.
- When the system malfunction occurs.
- When ABS or VDC (including the TCS) operates.
- When the VDC is turned OFF.
- When the snow mode switch is turned ON.
- When driving into a strong light (i.e., sunlight).
- When the ICC sensor integrated unit body window is dirty and the measurement of the distance between the vehicles becomes difficult.

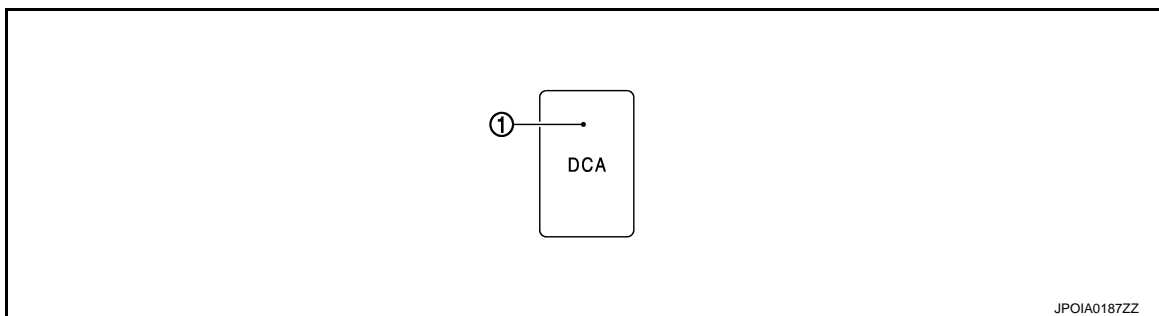
Operation At The Driver Operation

Give priority to the driver operation in the following situation.

- When the accelerator pedal is depressed again.
- When the brake pedal is depressed.

OPERATION AND DISPLAY

DCA Switch



1. DCA switch

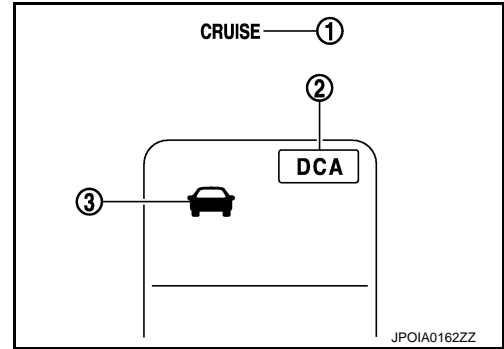
No.	Switch name	Description
1	DCA switch	Turn the DCA system ON/OFF.

DISTANCE CONTROL ASSIST SYSTEM

[DCA]

< SYSTEM DESCRIPTION >

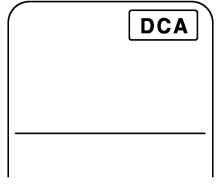
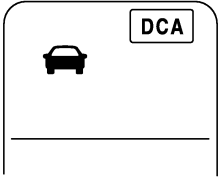
System Display



No.	Display item	Description
1	ICC system warning lamp	This indicates that an abnormal condition is present in the ICC system.
2	DCA system switch indicator	Indicates that the DCA switch is ON (DCA system ON).
3	Vehicle ahead detection indicator	Indicates whether it detects a vehicle ahead. NOTE: The vehicle ahead detection indicator turns OFF when the no operation condition is satisfied.

System Control Condition Display

The DCA system switch indicator illuminates and the system is turned ON by pressing the DCA switch at the system OFF.

	Condition	Display on combination meter
Operation status	Vehicle ahead not detected	
	Vehicle ahead detected	

Approach Warning Display

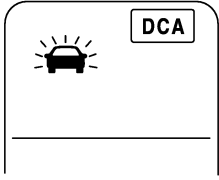
- If own vehicle comes closer to the vehicle ahead due to rapid deceleration of that vehicle or if another vehicle cuts in, the system warns the driver with the chime and DCA system display. Decelerate by depressing the brake pedal to maintain a safe vehicle distance if:
 - The chime sounds.
 - The vehicle ahead detection indicator blinks.
- The warning chime may not sound in some cases when there is a short distance between vehicles. Some examples are:
 - When the vehicles are traveling at the same speed and the distance between vehicles is not changing
 - When the vehicle ahead is traveling faster and the distance between vehicles is increasing
 - When a vehicle cuts in near own vehicle
- The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.

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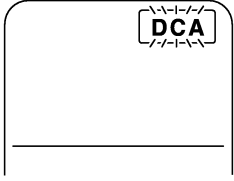
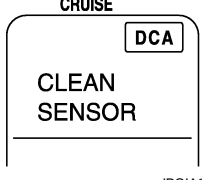
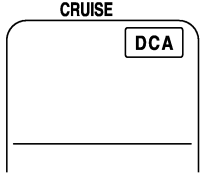
DISTANCE CONTROL ASSIST SYSTEM

< SYSTEM DESCRIPTION >

[DCA]

Condition	Display on combination meter
When the system judges that the brake operation by the driver is necessary	 <p style="text-align: right; font-size: small;">JPOIA0188ZZ</p>

Warning Lamp Display

	Condition	Description	Display on combination meter
Warning display	<ul style="list-style-type: none"> When the VDC or ABS (including the TCS) operates When the VDC is turned OFF When the snow mode switch is turned ON When driving into a strong light (i.e., sunlight) 	The DCA system is automatically canceled. The chime will sound and the DCA system switch indicator will blink. NOTE: The system operates if the DCA switch is turned OFF⇒ON after the condition improves.	 <p style="text-align: right; font-size: small;">JPOIA0165ZZ</p>
	When the sensor window is dirty, making it impossible to detect a vehicle ahead	The DCA system is automatically canceled. The chime sounds and the ICC system warning lamp will come on and the "CLEAN SENSOR" indicator will appear. NOTE: Stop the vehicle in a safe location and turn the ignition switch OFF. Clean the dirty area with soft cloth. The system returns to normal condition when turning the ignition switch ON again.	<p style="text-align: center; font-size: small;">CRUISE</p>  <p style="text-align: right; font-size: small;">JPOIA0166ZZ</p>
	When the DCA system is not operating properly	The chime sounds and the ICC system warning lamp will come on. NOTE: Turn the ignition switch OFF, and then turn the ignition switch ON again. If there is no malfunction, the system returns to the normal condition.	<p style="text-align: center; font-size: small;">CRUISE</p>  <p style="text-align: right; font-size: small;">JPOIA0167ZZ</p>

NOTE:

When the DCA system is automatically canceled, the cancellation condition can be displayed on "WORK SUPPORT" of CONSULT-III (ICC).

ICC SENSOR INTEGRATED UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name	Description
ECM	Accelerator pedal position signal	Receives the accelerator pedal position signal from ECM via CAN communication.
	ICC brake switch signal	Receives the ICC brake switch signal from ECM via CAN communication.
	Stop lamp switch signal	Receives the stop lamp switch signal from ECM via CAN communication.
	Closed throttle position signal	Receives the closed throttle position signal from ECM via CAN communication.
	Engine speed signal	Receives the engine speed signal from ECM via CAN communication.

DISTANCE CONTROL ASSIST SYSTEM

< SYSTEM DESCRIPTION >

[DCA]

Transmit unit	Signal name	Description
TCM	Shift position signal	Receives the shift position signal from TCM via CAN communication.
	Output shaft revolution signal	Receives the output shaft revolution signal from TCM via CAN communication.
	Current gear position signal	Receives the current gear position signal from TCM via CAN communication.
	Input speed signal	Receives the input speed signal from TCM via CAN communication.
Brake booster control unit	Brake fluid pressure control signal	Receives the brake fluid pressure control signal from the brake booster control unit via ITS communication.
	Release switch signal	Receives the release switch signal from the brake booster control unit via ITS communication.
	DCA switch signal	Receives the DCA switch signal from the brake booster control unit via ITS communication.
ABS actuator and electric unit (control unit)	Vehicle speed signal	Receives the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) via CAN communication.
Steering angle sensor	Steering angle sensor signal	Receives the steering angle sensor signal from the steering angle sensor via CAN communication.
Accelerator pedal actuator	Accelerator pedal actuator status signal	Receives the accelerator pedal actuator status signal from the accelerator pedal actuator via ITS communication.

Output Signal Item

Reception unit	Signal name	Description
Combination meter (via unified meter and A/C amp.)	Meter display signal	Vehicle ahead detection indicator signal
		DCA system switch indicator signal
	ICC warning lamp signal	Transmits the meter display signal to the combination meter (via unified meter and A/C amp.) via CAN communication.
ICC warning chime	Buzzer output signal	Transmits the ICC warning lamp signal to the combination meter (through unified meter and A/C amp.) via CAN communication.
ICC brake hold relay	ICC brake hold relay drive signal	<ul style="list-style-type: none"> Transmits the buzzer output signal to the brake booster control unit via ITS communication. The brake booster control unit outputs the buzzer output signal and operates the ICC warning chime.
Brake booster control unit	Brake fluid pressure command signal	<ul style="list-style-type: none"> Transmits the ICC brake hold relay drive signal to the brake booster control unit via ITS communication. The brake booster control unit outputs the ICC brake hold relay drive signal and operates the ICC brake hold relay.
Accelerator pedal actuator	Accelerator pedal position signal	Transmits the brake fluid pressure command signal to the brake booster control unit via ITS communication.
	Accelerator pedal feedback force control signal	Transmits the accelerator pedal position signal received from ECM via CAN communication to the accelerator pedal actuator via ITS communication.
		Transmits the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.

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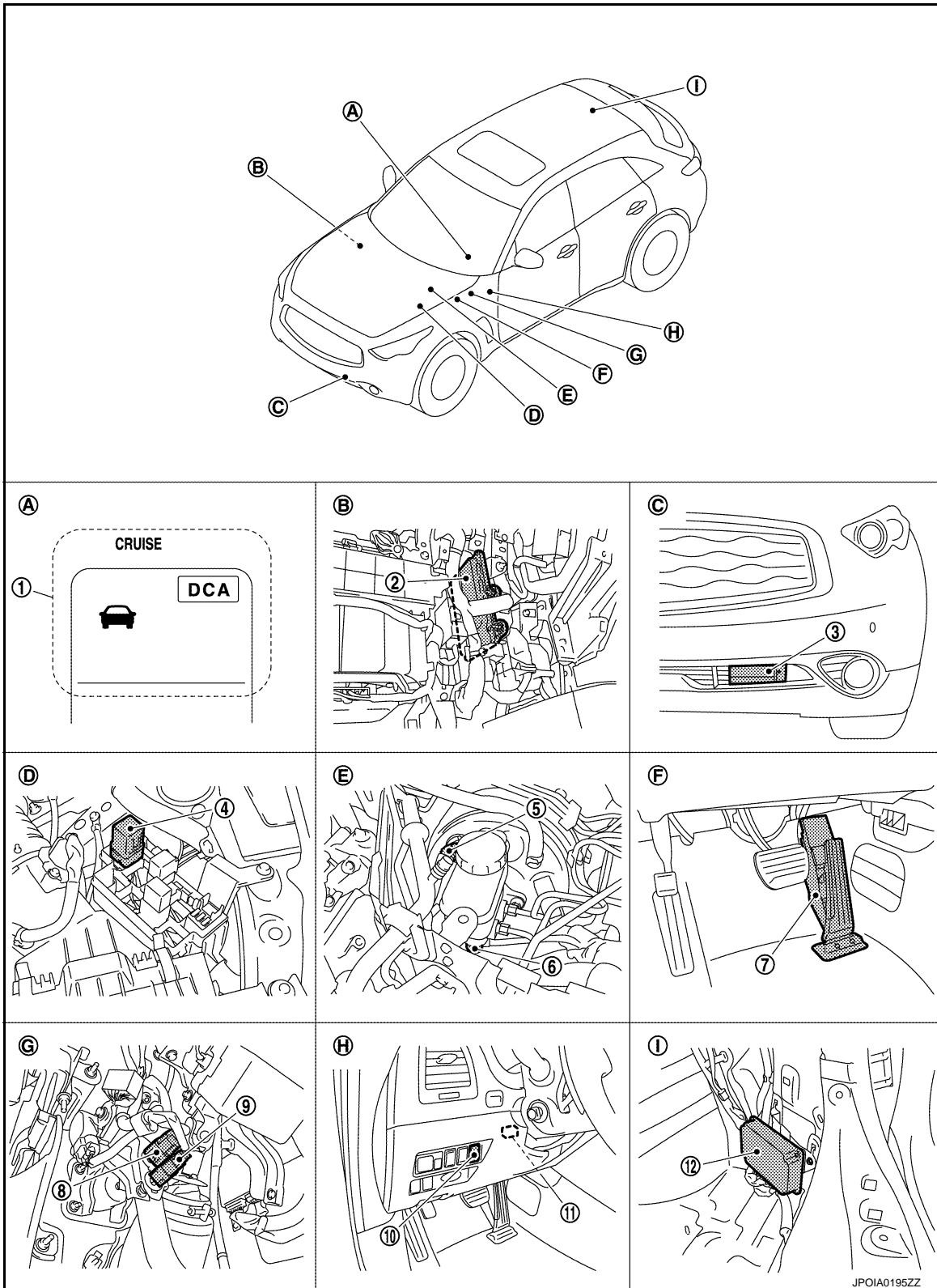
DISTANCE CONTROL ASSIST SYSTEM

[DCA]

< SYSTEM DESCRIPTION >

Component Parts Location

INFOID:000000003902393



- | | | |
|--|-------------------------------------|-------------------------------|
| 1. Information display, ICC system warning lamp | 2. ECM | 3. ICC sensor integrated unit |
| 4. ICC brake hold relay | 5. Booster solenoid/ Release switch | 6. Brake pressure sensor |
| 7. Accelerator pedal actuator (accelerator pedal assembly) | 8. Stop lamp switch | 9. ICC brake switch |

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DISTANCE CONTROL ASSIST SYSTEM

[DCA]

< SYSTEM DESCRIPTION >

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|------------------------------|--------------------------------|--|
| 10. DCA switch | 11. ICC warning chime | 12. Brake booster control unit |
| A. On the combination meter | B. Behind the glove box | C. Front bumper (LH) |
| D. Right side of engine room | E. Engine room (LH) | F. Built in accelerator pedal assembly |
| G. Upper side of brake pedal | H. Instrument lower panel (LH) | I. Luggage room (RH) |

Component Description

INFOID:000000003902394

Component	Description
ICC sensor integrated unit	Refer to CCS-206, "Description" .
ECM	Refer to CCS-238, "Description" .
ABS actuator and electric unit (control unit)	Refer to CCS-212, "Description" .
TCM	Refer to CCS-298, "Description" .
Unified meter and A/C amp.	Receives the meter display signal and ICC warning lamp signal from ICC sensor integrated unit via CAN communication and transmits them to the combination meter via the communication line.
Combination meter	<ul style="list-style-type: none"> • Perform the following operations using the signals received from the unified meter and A/C amp. via the communication line. - Displays the DCA system operation status using the meter display signal. - Illuminates the ICC system warning lamp using the ICC warning lamp signal.
ICC brake switch	Refer to CCS-214, "Description" .
Stop lamp switch	
ICC brake hold relay	Refer to CCS-231, "Description" .
Brake booster control unit	Refer to CCS-249, "Description" .
Brake booster	Refer to CCS-249, "Description" .
Brake pressure sensor	Refer to CCS-219, "Description" .
Booster solenoid/release switch	<ul style="list-style-type: none"> • Refer to CCS-221, "Description" for booster solenoid. • Refer to CCS-224, "Description" for release switch.
ICC warning chime	Refer to CCS-314, "Description" .
Steering angle sensor	Refer to CCS-273, "Description" .
Accelerator pedal actuator	Refer to CCS-279, "Description" .

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DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

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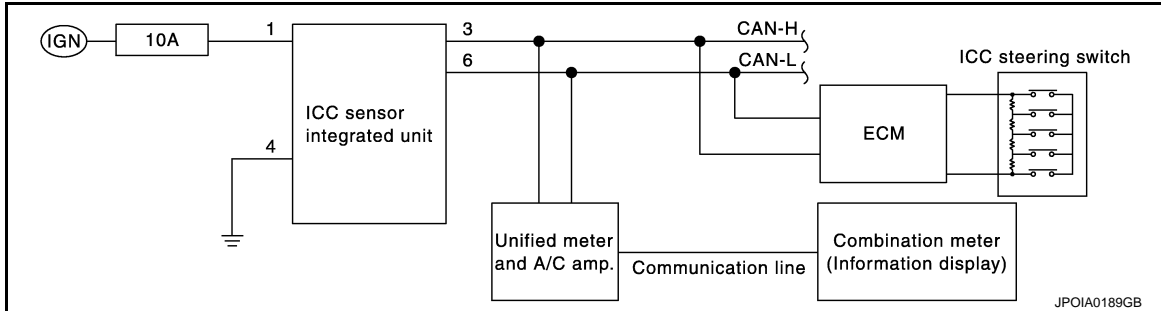
DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

Diagnosis Description

INFOID:000000003902395

The DTC is displayed on the information display by operating the ICC steering switch.

ON BOARD SELF-DIAGNOSIS SYSTEM DIAGRAM



ON BOARD SELF-DIAGNOSIS OPERATION PROCEDURE

CAUTION:

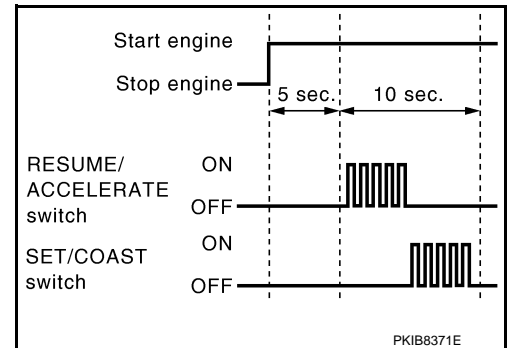
Start condition of on board self-diagnosis

- MAIN switch OFF
- DCA switch OFF
- Vehicle speed 0 km/h (0 MPH)

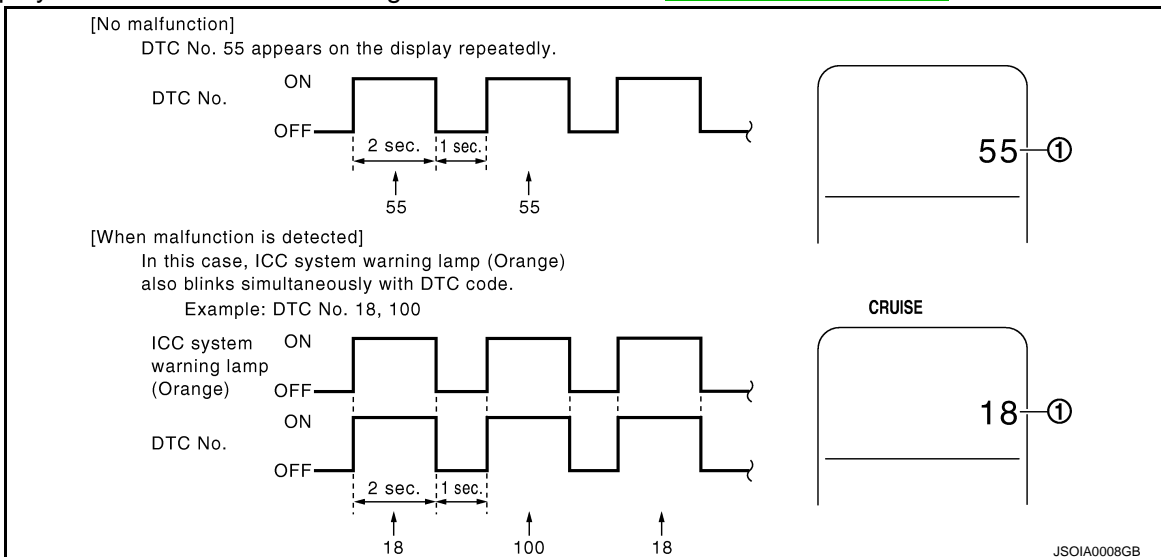
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [CCS-330, "DTC Index"](#).



NOTE:

- It displays for up to 5 minutes and then stops.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

[DCA]

< SYSTEM DESCRIPTION >

- If multiple malfunctions exist, up to 3 DTCs can be stored in memory at the most, and the most recent one is displayed first.

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

Assumed abnormal part		Inspection item
ICC system display	Combination meter malfunction	Check that the self-diagnosis function of the combination meter operates. Refer to MWI-43, "Diagnosis Description" .
	Unified meter and A/C amp. malfunction	Check power supply and ground circuit of unified meter and A/C amp. Refer to MWI-58, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure" .
	Communication error of the combination meter and the unified meter and A/C amp.	Start the self-diagnosis of the unified meter and A/C amp. and then check the self-diagnosis results. Refer to MWI-112, "DTC Index" .
ICC steering switch malfunction	Perform the inspection for DTC "C1A06". Refer to CCS-65, "Diagnosis Procedure" .	
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ICC sensor integrated unit malfunction		<ul style="list-style-type: none"> Check power supply and ground circuit of ICC sensor integrated unit. Refer to CCS-311, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure". Perform SELF-DIAGNOSIS for "ICC" with CONSULT-III, and then check the malfunctioning parts. Refer to CCS-330, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

- Turn the ignition switch OFF.
- Start the engine, and then start the on board self-diagnosis.
- Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

NOTE:

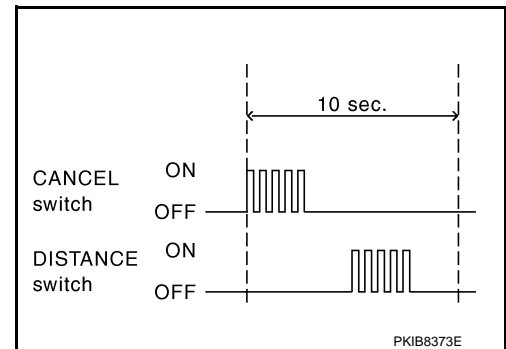
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

- DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

- Turn ignition switch OFF, and finish the diagnosis.



CONSULT-III Function (ICC)

INFOID:000000003902396

DESCRIPTION

CONSULT-III performs the following functions via CAN communication using ICC sensor integrated unit.

Diagnosis mode	Description
Work Support	<ul style="list-style-type: none"> It can monitor the adjustment direction indication in order to perform the laser beam aiming operation smoothly. Displays causes of automatic cancellation of the ICC system.
Self Diagnostic Result	Displays malfunctioning system memorized in ICC sensor integrated unit.
Data Monitor	Displays real-time input/output data of ICC sensor integrated unit.
Active Test	Enables operation check of electrical loads by transmitting driving signal to them.

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DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[DCA]

Diagnosis mode	Description
Ecu Identification	<ul style="list-style-type: none"> • Displays ICC sensor integrated unit part number. • Displays brake booster control unit part number. • Displays accelerator pedal assembly part number.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

WORK SUPPORT

Work support items	Description
CAUSE OF AUTO-CANCEL	Displays causes of automatic cancellation of the ICC system.
LASER BEAM ADJUST	Outputs laser beam, calculates dislocation of the beam, and indicates adjustment direction.

Display Items For The Cause Of Automatic Cancellation

NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

×: Applicable

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	DCA system	Description
OPERATING WIPER	×			The wiper operates at HI or LO (it includes when the wiper is operated at LO or HI with the wiper switch INT position)
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range.
LASER SUNBEAM	×		×	Intense light such as sunlight entered ICC sensor integrated unit light sensing part
LASER TEMP	×		×	Temperature around ICC sensor integrated unit became low
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
SNOW MODE SW	×		×	Snow mode switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from A/T vehicle speed
TIRE SLIP	×	×		Wheel slipped
IGN LOW VOLT	×	×	×	Power supply voltage became low
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 32 km/h (20 MPH)
CAN COMM ERROR	×	×	×	ICC sensor integrated unit received an abnormal signal with CAN communication
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system
BCU CIRCUIT	×	×	×	The brake booster control unit is malfunctioning

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[DCA]

INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously
PARKING BRAKE ON	×	×		The parking brake is operating
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high
NO RECORD	×	×	×	-

Laser Beam Adjust

Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

SELF DIAGNOSTIC RESULT

Refer to [CCS-330, "DTC Index"](#).

DATA MONITOR

×: Applicable

Monitored item [Unit]	MAIN SIGNAL	Description
MAIN SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
SET/COAST SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CANCEL SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
RESUME/ACC SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
DISTANCE SW [On/Off]		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CRUISE OPE [On/Off]	×	Indicates whether controlling or not (ON means "controlling").
BRAKE SW [On/Off]	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication).
STOP LAMP SW [On/Off]	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication).
IDLE SW [On/Off]		Indicates [On/Off] status of idle switch read from ICC sensor integrated unit through CAN communication (ECM transmits On/Off status through CAN communication).
SET DISTANCE [Short/Mid/Long]	×	Indicates set distance memorized in ICC sensor integrated unit.
CRUISE LAMP [On/Off]	×	Indicates [On/Off] status of MAIN switch indicator output.
OWN VHCL [On/Off]		Indicates [On/Off] status of own vehicle indicator output.
VHCL AHEAD [On/Off]		Indicates [On/Off] status of vehicle ahead detection indicator output.
ICC WARNING [On/Off]		Indicates [On/Off] status of ICC system warning lamp output.
BA WARNING [On/Off]		Indicates [On/Off] status of IBA OFF indicator lamp output.
VHCL SPEED SE [km/h] or [mph]	×	Indicates vehicle speed calculated from ICC sensor integrated unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication].
SET VHCL SPD [km/h] or [mph]	×	Indicates set vehicle speed memorized in ICC sensor integrated unit.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[DCA]

Monitored item [Unit]	MAIN SIGNAL	Description
BUZZER O/P [On/Off]		Indicates [On/Off] status of ICC warning chime output.
THRTL SENSOR [deg]	×	NOTE: The item is displayed, but it is not monitored.
ENGINE RPM [rpm]		Indicates engine speed read from ICC sensor integrated unit through CAN communication (ECM transmits engine speed through CAN communication).
WIPER SW [Off/Low/High]		Indicates wiper [Off/Low/High] status (BCM transmits front wiper request signal through CAN communication).
YAW RATE [deg/s]		NOTE: The item is displayed, but it is not monitored.
RELEASE SW NO [On/Off]		Indicates [On/Off] status as judged from release switch signal. ON: When brake pedal is depressed. OFF: When brake pedal is not depressed.
RELEASE SW NC [On/Off]		Indicates [On/Off] status as judged from release switch signal. ON: When brake pedal is not depressed. OFF: When brake pedal is depressed.
STP LMP DRIVE [On/Off]	×	Indicates [On/Off] status of ICC brake hold relay drive output.
PRESS SENS [bar]	×	Indicates brake fluid pressure value calculated from signal voltage of brake pressure sensor.
D RANGE SW [On/Off]		Indicates [On/Off] status of "D" or "DS" or "M" positions read from ICC sensor integrated unit through CAN communication; ON when position "D" or "DS" or "M" (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]		Indicates shift position signal read from ICC sensor integrated unit through CAN communication (TCM transmits shift position signal through CAN communication).
PWR SUP MONI [V]	×	Indicates IGN voltage input by ICC sensor integrated unit.
VHCL SPD AT [km/h] or [mph]		Indicates vehicle speed calculated from A/T vehicle speed sensor read from ICC sensor integrated unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication).
THRTL OPENING [%]	×	Indicates throttle position read from ICC sensor integrated unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]		Indicates A/T gear position read from ICC sensor integrated unit through CAN communication (TCM transmits current gear position signal through CAN communication).
CLUTCH SW SIG [On/Off]	×	NOTE: The item is displayed, but it is not monitored.
NP SW SIG [On/Off]	×	NOTE: The item is displayed, but it is not used.
PKB SW [On/Off]		Parking brake switch status [On/Off] judged from the parking brake switch signal that ICC sensor integrated unit readout via CAN communication is displayed (Unified meter and A/C amp. transmits the parking brake switch signal via CAN communication)
MODE SIG [Off, ICC, ASCD]		Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode].
SET DISP IND [On/Off]		Indicates [On/Off] status of SET switch indicator output.
DISTANCE [m]		Indicates the distance from the vehicle ahead.
RELATIVE SPD [m/s]		Indicates the relative speed of the vehicle ahead.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[DCA]

Monitored item [Unit]	MAIN SIGNAL	Description
DCA ON SW [On/Off]	×	Status [On/Off] judged from DCA switch signal that ICC sensor integrated unit readout via ITS communication is displayed (Brake booster control unit transmits the DCA switch signal via ITS communication).
DCA ON IND [On/Off]		The status [On/Off] of DCA system switch indicator output is displayed.
DCA VHL AHED [On/Off]		The status [On/Off] of vehicle ahead detection indicator output in DCA system is displayed.
APA TEMP [°C]		The accelerator pedal actuator integrated motor temperature that the ICC sensor integrated unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication).
APA PWR [V]		Accelerator pedal actuator power supply voltage that the ICC sensor integrated unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication).
IBA SW [On/Off]		Status [On/Off] judged from IBA OFF switch signal that ICC sensor integrated unit readout via ITS communication is displayed (Brake booster control unit transmits the IBA OFF switch signal via ITS communication).

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the ICC system warning lamp is illuminated.**
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
METER LAMP	The ICC system warning lamp, MAIN switch indicator, SET switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary.
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary.
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated.
BOOSTER SOL/V	The booster solenoid can be operated as necessary, and the brake can be operated.
ICC BUZZER	The ICC warning chime can sound by ON/OFF operations as necessary.
ACCELERATOR PEDAL AC-TUATOR	The accelerator pedal actuator can be operated as necessary.

METER LAMP

NOTE:

The test can be performed only when the engine is running.

Test item	Oper- ation	Description	Signal
METER LAMP	Off	Stops transmitting the signals below to end the test. <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	OFF
	On	Transmits the following signals to the unified meter and A/C amp. via CAN communication. <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	ON

DCA INDICATOR

NOTE:

The test can be performed only when the engine is running.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[DCA]

Test item	Operation	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test.	OFF
	On	Transmits the DCA system switch indicator signal to the unified meter and A/C amp. via CAN communication.	ON

STOP LAMP

Test item	Operation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal below to end the test.	OFF
	On	Transmits the ICC brake hold relay drive signal to the brake booster control unit via ITS communication.	ON

BOOSTER SOL/V

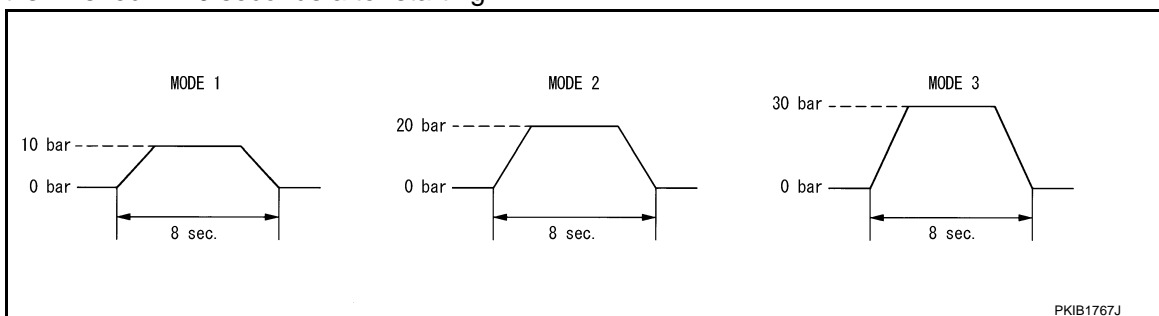
NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	"PRESS SENS" value
BOOSTER SOL/V	MODE1	Transmits the brake fluid pressure command signal to the brake booster control unit via ITS communication.	10 bar
	MODE2		20 bar
	MODE3		30 bar
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3".	—
	Reset	Stops transmitting the brake fluid pressure command signal below to end the test.	—
	End	Returns to the "SELECT TEST ITEM" screen.	—

NOTE:

The test is finished in 10 seconds after starting.



ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signal to the brake booster control unit via ITS communication.	Intermittent beep sound
	MODE2		Continuous beep sound
	MODE3		Beep sound
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3".	—
	Reset	Stops transmitting the buzzer output signal below to end the test.	—
	End	Returns to the "SELECT TEST ITEM" screen.	—

ACCELERATOR PEDAL ACTUATOR

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[DCA]

CAUTION:

- Shift the selector lever to “P” position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

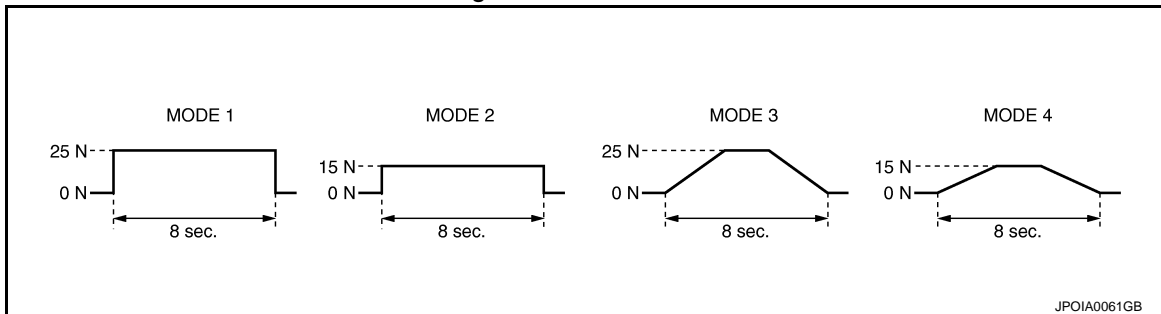
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

Test item	Operation	Description	Accelerator pedal operation
ACCELERATOR PEDAL ACTUATOR	MODE1	Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.	Constant with a force of 25 N for 8 seconds
	MODE2		Constant with a force of 15 N for 8 seconds
	MODE3		Change up to a force of 25 N for 8 seconds
	MODE4		Change up to a force of 15 N for 8 seconds
	Test start	Starts the tests of “MODE1”, “MODE2”, “MODE3”, and “MODE4”.	—
	Reset	Stops transmitting the accelerator pedal feedback force control signal below to end the test.	—
	End	Returns to the “SELECT TEST ITEM” screen.	—

NOTE:

The test is finished in 10 seconds after starting.



CCS

DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

< SYSTEM DESCRIPTION >

[DCA]

DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

CONSULT-III Function (ACCELE PEDAL ACT)

INFOID:000000003902397

DESCRIPTION

CONSULT-III performs the following functions via CAN communication with ICC sensor integrated unit and the communication with accelerator pedal actuator.

Test mode	Function
Self Diagnostic Result	<ul style="list-style-type: none">• Displays malfunctioning system memorized in accelerator pedal actuator.• Displays the Freeze Frame Data when the malfunction is detected.
DATA MONITOR	Displays real-time input/output data of accelerator pedal actuator.
ACTIVE TEST	Enables operation check of electrical loads by sending driving signal to them.
ECU identification	Displays accelerator pedal actuator parts number.

SELF DIAGNOSTIC RESULT

Self Diagnostic Result

Refer to [CCS-347, "DTC Index"](#).

FFD (Freeze Frame Data)

The accelerator pedal actuator records the following data when the malfunction is detected.

Freeze Frame Data item [Unit]	Description
TGT FBK FRC [N]	It displays the target accelerator pedal actuation force that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication at the time when the malfunction is detected.
TGT MOT POSI [%]	It displays the target motor position that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication at the time when the malfunction is detected.
ACT MOT POSI [%]	It displays the integrated motor position that the accelerator pedal actuator read out at the time when the malfunction is detected.
AP OPEN [%]	It displays the accelerator pedal position signal that the accelerator pedal actuator read out via ITS communication at the time when the malfunction is detected.
APA TEMP [°C]	It displays the integrated motor temperature that the accelerator pedal actuator read out at the time when the malfunction is detected.
APA CURRENT [A]	It displays the integrated motor consumption current that the accelerator pedal actuator read out at the time when the malfunction is detected.
APA PWR [V]	It displays the power supply voltage that the accelerator pedal actuator read out at the time when the malfunction is detected.
APA OPE STATS [On/Off]	It displays the activation permission status of accelerator pedal actuator at the time when the malfunction is detected.
APA STATS [READY/NG/TP NG/INIT]	It displays the condition of accelerator pedal actuator at the time when the malfunction is detected.
IGN Counter ^{Note}	It displays number of ignition switch OFF → ON after the malfunction is detected.

NOTE:

- The number is 0 when is detected now.
- The number increases like 1 → 2 ... 38 → 39 after returning to the normal condition whenever IGN OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

DATA MONITOR

DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

< SYSTEM DESCRIPTION >

[DCA]

Monitor item [Unit]	FUNCTION DESCRIPTION
TGT FBK FRC [N]	It displays the target accelerator pedal actuation force that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication. (The ICC sensor integrated unit transmits the accelerator pedal feedback force control signal via ITS communication)
TGT MOT POSI [%]	It displays the target motor position that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication. (The ICC sensor integrated unit transmits the accelerator pedal feedback force control signal via ITS communication)
ACT MOT POSI [%]	It displays the integrated motor position that the accelerator pedal actuator read out.
AP OPEN [%]	It displays the accelerator pedal position signal that the accelerator pedal actuator read out via ITS communication. (The ICC sensor integrated unit transmits with ITS communication the accelerator pedal position signal that is received from ECM via CAN communication)
APA TEMP [°C]	It displays the accelerator pedal actuator integrated motor temperature.
APA CURRENT [A]	It displays the accelerator pedal actuator integrated motor consumption current.
APA PWR [V]	It displays the power supply voltage that the accelerator pedal actuator read out.
APA OPE STATS [On/Off]	It displays the activation permission status of accelerator pedal actuator.
APA STATS [READY/NG/TP NG/INIT]	It displays the condition of accelerator pedal actuator.

ACTIVE TEST

CAUTION:

Never perform ACTIVE TEST while driving the vehicle.

NOTE:

The active test cannot be performed when the ICC system warning lamp is illuminated.

Item list

Active test item	Description
ACCELERATOR PEDAL ACTUATOR TEST1	Drive the accelerator pedal actuator and generate the constant accelerator pedal actuation force.
ACCELERATOR PEDAL ACTUATOR TEST2	Drive the accelerator pedal actuator and generate the vibration.

ACCELERATOR PEDAL ACTUATOR TEST 1

NOTE:

Check the accelerator pedal by depressing when performing the test.

Active test item	Operation	Description
ACCELERATOR PEDAL ACTUATOR TEST1	STOP	Finish the test.
	START	Generate the constant accelerator pedal actuation force for accelerator pedal.

ACCELERATOR PEDAL ACTUATOR TEST 2

NOTE:

Check the accelerator pedal by depressing when performing the test.

Active test item	Operation	Description
ACCELERATOR PEDAL ACTUATOR TEST 2	STOP	Finish the test.
	START	Generate the vibration for accelerator pedal.

ECU IDENTIFICATION

Displays accelerator pedal assembly parts number.

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CCS

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

Description

INFOID:000000003902398

ICC sensor integrated unit function description

- It detects the reflected light from the vehicle ahead by irradiating a laser forward. It calculates the vehicle distance from and relative speed with the vehicle ahead depending on the detected signal.
- It outputs the brake fluid pressure command signal to the brake booster control unit and the accelerator pedal feedback force control signal to the accelerator pedal actuator depending on the signal from various sensors and switches via ITS communication.

DTC Logic

INFOID:000000003902399

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00 (0)	CONTROL UNIT	ICC sensor integrated unit internal malfunction	ICC sensor integrated unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT-III.
3. Check if the "C1A00" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A00" detected as the current malfunction?

- YES >> Refer to [CCS-206, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000003902400

1.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-330, "DTC Index"](#).
 NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902401

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

C1A00 CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

2. CHECK DCA SYSTEM

1. Erase the “self-diagnosis results”, and then perform “All DTC Reading” again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

Description

INFOID:000000003902402

The ICC sensor integrated unit controls the system with the ignition power supply.

DTC Logic

INFOID:000000003902403

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	POWER SUPPLY CIR	ICC sensor integrated unit power supply voltage is excessively low (less than 8 V).	• Connector, harness, fuse • ICC sensor integrated unit
C1A02 (2)	POWER SUPPLY CIR 2	ICC sensor integrated unit power supply voltage is excessively high (more than 19 V).	

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A01" or "C1A02" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A01" or "C1A02" detected as the current malfunction?

YES >> Refer to [CCS-208, "Diagnosis Procedure"](#).

NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902404

1. CHECK ICC SENSOR INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ICC sensor integrated unit. Refer to [CCS-311, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

NO >> Repair or replace the malfunctioning parts.

Special Repair Requirement

INFOID:000000003902405

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A03 VEHICLE SPEED SENSOR

Description

INFOID:000000003902406

The ICC sensor integrated unit receives the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) and the A/T vehicle speed sensor signal (output shaft revolution signal) from TCM via CAN communication.

DTC Logic

INFOID:000000003902407

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) and the A/T vehicle speed sensor signal (output shaft revolution signal) from TCM, received by the ICC sensor integrated unit via CAN communication, are inconsistent	<ul style="list-style-type: none">• Wheel speed sensor• ABS actuator and electric unit (control unit)• Vehicle speed sensor A/T (output speed sensor)• TCM• ICC sensor integrated unit

NOTE:

If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04".

- Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [CCS-212, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Drive the vehicle at 30 km/h (19 MPH) or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT-III.
6. Check if the "C1A03" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A03" detected as the current malfunction?

- YES >> Refer to [CCS-210, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902408

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A04" or "U1000" is detected other than "C1A03" in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-330, "DTC Index"](#).
NO >> GO TO 2.

2. CHECK DATA MONITOR

1. Start the engine.
2. Drive the vehicle.
3. Check that the value of "VHCL SPD AT" is almost the same as the value of "VHCL SPEED SE" in "DATA MONITOR" of "ICC".

CAUTION:

Be careful of the vehicle speed.

C1A03 VEHICLE SPEED SENSOR

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
NO >> GO TO 3.

3.CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).
NO >> GO TO 4.

4.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902409

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

C1A04 ABS/TCS/VDC SYSTEM

Description

INFOID:000000003902410

ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), and VDC/TCS/ABS system operation condition to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902411

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A04 (4)	ABS/TCS/VDC CIRC	If the malfunction occurs in the VDC/TCS/ABS system	ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000003902412

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if the "U1000" is detected other than "C1A04" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902413

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

C1A04 ABS/TCS/VDC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

>> WORK END

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C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A05 BRAKE SW/STOP LAMP SW

Description

INFOID:000000003902414

- ICC brake switch is turned OFF and stop lamp switch is turned ON, when depressing the brake pedal.
- ICC brake switch signal and stop lamp switch signal are input to ECM. These signals are transmitted from ECM to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902415

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A05 (5)	BRAKE SE/STOP L SW	If ICC sensor integrated unit receives the ICC brake switch signal ON status during the stop lamp switch signal ON status	<ul style="list-style-type: none">• Stop lamp switch circuit• ICC brake switch circuit• Stop lamp switch• ICC brake switch• Incorrect stop lamp switch installation• Incorrect ICC brake switch installation• ECM

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000003902416

1.CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if the "U1000" is detected other than "C1A05" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> GO TO 12.
- NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 3.
- NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 8.

3.CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Adjust ICC brake switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

4.ICC BRAKE SWITCH INSPECTION

1. Disconnect ICC brake switch connector.
2. Check ICC brake switch. Refer to [CCS-217, "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace ICC brake switch.

C1A05 BRAKE SW/STOP LAMP SW

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

5. CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
3	4	Existed

Is the inspection result normal?

- YES >> GO TO 6.
 NO >> Replace ICC brake hold relay.

6. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ICC BRAKE SWITCH

1. Check for continuity between ICC brake hold relay harness connector and ICC brake switch harness connector.

ICC brake hold relay		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
E91	4	E114	1	Existed

2. Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E91	4		Not existed

Is the inspection result normal?

- YES >> GO TO 7.
 NO >> Repair the harnesses or connectors.

7. CHECK HARNESS BETWEEN ECM AND ICC BRAKE SWITCH

1. Disconnect ECM connector.
2. Check for continuity between the ECM harness connector and ICC brake switch harness connector.

VQ35HR

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M107	126	E114	2	Existed

VK50VE

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M160	117	E114	2	Existed

3. Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	126		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	117		Not existed

Is the inspection result normal?

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CCS

C1A05 BRAKE SW/STOP LAMP SW

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 12.
NO >> Repair the harnesses or connectors.

8. CHECK STOP LAMP FOR ILLUMINATION

Check the stop lamp for illumination.

Is the inspection result normal?

- YES >> GO TO 9.
NO >> Repair the stop lamp circuit.

9. CHECK ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
3	4	Existed
6	7	Not existed

Is the inspection result normal?

- YES >> GO TO 10.
NO >> Replace ICC brake hold relay.

10. CHECK HARNESS BETWEEN ECM AND ICC BRAKE HOLD RELAY

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors.
2. Check for continuity between the ECM harness connector and ICC brake hold relay harness connector.

VQ35HR

ECM		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
M107	122	E91	6	Existed

VK50VE

ECM		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
M160	110	E91	6	Existed

3. Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	122		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	110		Not existed

Is the inspection result normal?

- YES >> GO TO 11.
NO >> Repair the harnesses or connectors.

11. CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND ICC BRAKE HOLD RELAY

1. Disconnect brake booster control unit connector.
2. Check for continuity between the brake booster control unit harness connector and brake hold relay harness connector.

C1A05 BRAKE SW/STOP LAMP SW

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Brake booster control unit		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
B249	47	E91	1	Existed

3. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B249	47		Not existed

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-542. "DTC Index"](#) (VQ35HR) or [EC-1172. "DTC Index"](#) (VK50VE).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> GO TO 13.

13.CHECK ICC BRAKE HOLD RELAY DRIVE SIGNAL OUTPUT

1. Select the active test item "STOP LAMP" of "ICC".
2. Check if "STP LMP DRIVE" is turned ON when operating the test item.

Is the inspection result normal?

YES >> Replace brake booster control unit.

NO >> Replace ICC sensor integrated unit. Refer to [CCS-363. "Exploded View"](#).

Component Inspection (ICC Brake Switch)

INFOID:000000003902417

1.CHECK ICC BRAKE SWITCH

Check for continuity between ICC brake switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Not existed
		When brake pedal is released	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ICC brake switch.

Component Inspection (Stop Lamp Switch)

INFOID:000000003902418

1.CHECK STOP LAMP SWITCH

Check for continuity between stop lamp switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed

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C1A05 BRAKE SW/STOP LAMP SW

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Terminal		Condition	Continuity
3	4	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch.

Special Repair Requirement

INFOID:000000003902419

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A08 PRESSURE SENSOR

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

C1A08 PRESSURE SENSOR

Description

INFOID:000000003902425

- The brake pressure sensor detects the brake fluid pressure value in the brake master cylinder and outputs the value to the brake booster control unit.
- The brake booster control unit receives the brake fluid pressure command signal from the ICC sensor integrated unit via ITS communication and controls the brake fluid pressure while feeding back the brake fluid pressure value (brake fluid pressure control signal).

DTC Logic

INFOID:000000003902426

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A08 (8)	PRESS SEN CIRCUIT	If the brake pressure sensor value that is input to the brake booster control unit is malfunctioning	<ul style="list-style-type: none"> • Brake pressure sensor circuit • Brake pressure sensor • Brake booster control unit

NOTE:

If DTC "C1A08" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check that the "C1A08" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A08" detected as the current malfunction?

- YES >> Refer to [CCS-219, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902427

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A08" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND BRAKE PRESSURE SENSOR

1. Turn the ignition switch OFF.
2. Disconnect connectors of brake booster control unit and brake pressure sensor.
3. Check for continuity between the brake booster control unit harness connector and brake pressure sensor harness connector.

Brake booster control unit		Brake pressure sensor		Continuity
Connector	Terminal	Connector	Terminal	
B250	8	E45	3	Existed
	17		2	
	24		1	

4. Check for continuity between brake booster control unit harness connector and ground.

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C1A08 PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	8		Not existed
	17		
	24		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK BRAKE PRESSURE SENSOR POWER SUPPLY CIRCUIT

1. Connect connectors of brake booster control unit and brake pressure sensor.
2. Turn the ignition switch ON.
3. Check voltage between brake booster control unit harness connectors.

Terminals			Voltage (Approx.)
(+)	(-)		
Brake booster control unit			5 V
Connector	Terminal		
B250	8	24	

Is the inspection result normal?

YES >> Replace the brake pressure sensor.

NO >> Replace the brake booster control unit.

Special Repair Requirement

INFOID:000000003902428

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A09 BOOSTER SOLENOID

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

C1A09 BOOSTER SOLENOID

Description

INFOID:000000003902429

- The booster solenoid is integrated with the brake booster.
- The brake booster control unit activates the booster solenoid to operate the brake booster (brake) according to the brake fluid pressure command signal received from ICC sensor integrated unit via ITS communication.

DTC Logic

INFOID:000000003902430

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A09 (9)	BOOSTER SOL/V CIRC	If the booster solenoid is malfunctioning	<ul style="list-style-type: none">• Booster solenoid• Booster solenoid circuit• Brake booster control unit

NOTE:

If DTC "C1A09" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform the active test item "BOOSTER SOL/V" with CONSULT-III.
3. Perform "All DTC Reading".
4. Check if the "C1A09" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A09" detected as the current malfunction?

- YES >> Refer to [CCS-221, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902431

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A09" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BRAKE BOOSTER CONTROL UNIT POWER SUPPLY CIRCUIT

Check power supply and ground circuit of brake booster control unit. Refer to [CCS-311, "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3. CHECK HARNESS BETWEEN BRAKE BOOSTER (BOOSTER SOLENOID) AND BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Disconnect connectors of brake booster control unit and brake booster.
3. Check for continuity between the brake booster control unit harness connector and brake booster harness connector.

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C1A09 BOOSTER SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

Brake booster control unit		Brake booster		Continuity
Connector	Terminal	Connector	Terminal	
B250	10	E44	4	Existed
	12		6	

4. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	10		Not existed
	12		

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair the harnesses or connectors.

4.CHECK BOOSTER SOLENOID

Check the booster solenoid. Refer to [CCS-222, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace the brake booster control unit.
- NO >> Replace the brake booster.

Component Inspection

INFOID:000000003902432

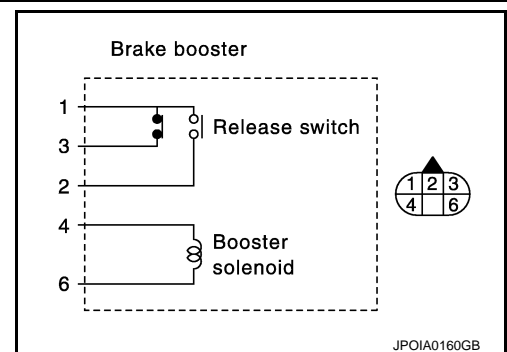
1.CHECK BRAKE BOOSTER (BOOSTER SOLENOID)

Check resistance between brake booster (booster solenoid) terminals.

Brake booster		Resistance
Terminal		
4	6	Approx. 1.4 Ω

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the brake booster.



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Special Repair Requirement

INFOID:000000003902433

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)

C1A09 BOOSTER SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

2. Check that the DCA system is normal.

>> WORK END

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C1A10 RELEASE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A10 RELEASE SWITCH

Description

INFOID:000000003902434

- The release switch is integrated with the brake booster.
- The release switch detects that the driver depresses the brake pedal, and it outputs the signal to the brake booster control unit.
- The brake booster control unit transmits the release switch signal [release switch NO signal (normal open), release switch NC signal (normal close)] to the ICC sensor integrated unit via ITS communication.

DTC logic

INFOID:000000003902435

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A10 (10)	RELEASE SW CIRC	If the release switch NO signal and the release switch NC signal, received from the brake booster control unit via ITS communication, are inconsistent	<ul style="list-style-type: none">• Release switch• Release switch circuit• Brake booster control unit

NOTE:

If DTC "C1A10" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE (1)

1. Start the engine.
2. Turn the DCA switch ON, and wait for 5 minutes or more.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A10" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A10" detected as the current malfunction?

YES >> Refer to [CCS-224, "Diagnosis Procedure"](#).

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (2)

1. Depress the brake pedal strongly 10 times or more.
2. Perform "All DTC Reading".
3. Check if the "C1A10" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A10" detected as the current malfunction?

YES >> Refer to [CCS-224, "Diagnosis Procedure"](#).

NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902436

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A10" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK HARNESS BETWEEN BRAKE BOOSTER (RELEASE SWITCH) AND BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Disconnect connectors of brake booster and brake booster control unit.
3. Check for continuity between the brake booster control unit harness connector and brake booster harness connector.

C1A10 RELEASE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

Brake booster control unit		Brake booster		Continuity
Connector	Terminal	Connector	Terminal	
B250	6	E44	1	Existed
	15		3	
	22		2	

4. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	6		Not existed
	15		
	22		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK RELEASE SWITCH POWER SUPPLY CIRCUIT

1. Connect the brake booster control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between brake booster control unit harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
Brake booster control unit		Ground
Connector	Terminal	
B250	6	
		10 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the brake booster control unit.

4. CHECK RELEASE SWITCH

Check the release switch. Refer to [CCS-225, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the brake booster control unit.

NO >> Replace the brake booster.

Component Inspection

INFOID:000000003902437

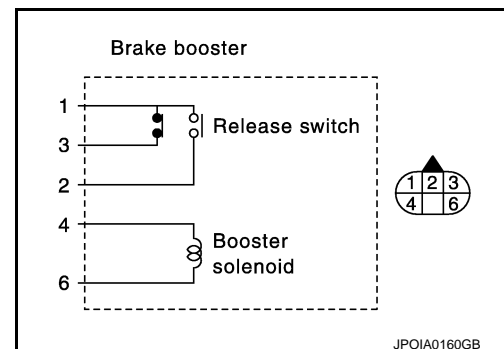
1. CHECK BRAKE BOOSTER (RELEASE SWITCH)

Check for continuity between brake booster (release switch) terminals.

Condition	1 – 3	1 – 2	2 – 3
Brake pedal not depressed	Continuity	No continuity	No continuity
Brake pedal depressed	No continuity ^{NOTE}	Continuity ^{NOTE}	No continuity

NOTE:

If the depressing force is weak, it may not be changed.



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C1A10 RELEASE SWITCH

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the brake booster.

Special Repair Requirement

INFOID:000000003902438

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A11 PRESSURE CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A11 PRESSURE CONTROL

Description

INFOID:000000003902439

- The brake booster control unit receives the brake fluid pressure command signal from ICC sensor integrated unit via ITS communication and activates the booster solenoid to operate the brake booster.
- The brake booster adjusts the brake fluid pressure by driving the booster solenoid.
- The brake pedal is controlled when the brake booster adjusts the brake fluid pressure.

DTC Logic

INFOID:000000003902440

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A11 (11)	PRESSURE CONTROL	If the brake booster is malfunctioning	Brake booster

NOTE:

If DTC "C1A11" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform the active test item "BOOSTER SOL/V" with CONSULT-III.
3. Perform "All DTC Reading".
4. Check if the "C1A11" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A11" detected as the current malfunction?

- YES >> Refer to [CCS-227, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902441

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A11" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BRAKE OPERATION

Check if the brake operates normally.

Does it operate normally?

- YES >> GO TO 4.
NO >> GO TO 3.

3. BRAKE LINE INSPECTION

1. Check the brake system, and then repair malfunctioning parts.
2. Erases All self-diagnosis results.
3. Perform "BOOSTER SOL/V" on "Active Test" of "ICC".

Does it operate normally?

- YES >> INSPECTION END
NO >> GO TO 4.

4. CHECK BOOSTER SOLENOID

Check the booster solenoid. Refer to [CCS-228, "Component Inspection"](#).

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CCS

C1A11 PRESSURE CONTROL

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace the brake booster.

5. CHECK HARNESS BETWEEN BRAKE BOOSTER (BOOSTER SOLENOID) AND BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Disconnect connectors of brake booster control unit and brake booster.
3. Check for continuity between the brake booster control unit harness connector and brake booster harness connector.

Brake booster control unit		Brake booster		Continuity
Connector	Terminal	Connector	Terminal	
B250	10	E44	4	Existed
	12		6	

4. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	10		Not existed
	12		

Is the inspection result normal?

- YES >> Replace the brake booster control unit.
- NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000003902442

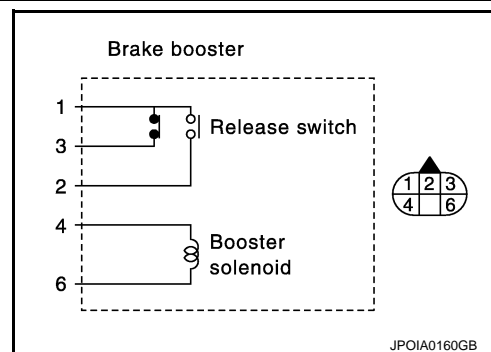
1. CHECK BRAKE BOOSTER (BOOSTER SOLENOID)

Check resistance between brake booster (booster solenoid) terminals.

Brake booster		Resistance
Terminal		
4	6	Approx. 1.4 Ω

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the brake booster.



INFOID:000000003902443

Special Repair Requirement

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

C1A11 PRESSURE CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

2. CHECK DCA SYSTEM

1. Erase the “self-diagnosis results”, and then perform “All DTC Reading” again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

C1A12 LASER BEAM OFF CENTER

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A12 LASER BEAM OFF CENTER

Description

INFOID:000000003902444

ICC sensor integrated unit detects the reflected light from the vehicle ahead by irradiating a laser forward. It calculates the distance from and relative speed with the vehicle ahead based on the detected signal.

DTC Logic

INFOID:000000003902445

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A12 (12)	LASER BEAM OFFCNTR	Laser beam of ICC sensor integrated unit is off the aiming point	Laser beam is off the aiming point

Diagnosis Procedure

INFOID:000000003902446

1. ADJUST LASER BEAM AIMING

1. Adjust the laser beam aiming with CONSULT-III. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).
2. Perform "All DTC Reading".
3. Check if the "C1A12" is detected in "Self Diagnostic Result" of "ICC".

Is "C1A12" detected?

- YES >> Replace ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
- NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902447

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

C1A13 STOP LAMP RELAY

Description

INFOID:000000003902448

- The ICC sensor integrated unit transmits the ICC brake hold relay drive signal to the brake booster control unit via ITS communication.
- The ICC brake hold relay activates the stop lamp by the ICC brake hold relay drive signal (stop lamp drive signal) outputted by the brake booster control unit.

DTC Logic

INFOID:000000003902449

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A13 (13)	STOP LAMP RLY FIX	<ul style="list-style-type: none">• If the stop lamp is not activated even though the ICC sensor integrated unit is transmitting a ICC brake hold relay drive signal.• If the stop lamp is activated even though the ICC sensor integrated unit is not transmitting a ICC brake hold relay drive signal.	<ul style="list-style-type: none">• Stop lamp switch circuit• ICC brake switch circuit• ICC brake hold relay circuit• Stop lamp switch• ICC brake switch• ICC brake hold relay• Incorrect stop lamp switch installation• Incorrect ICC brake switch installation• ECM

NOTE:

If DTC "C1A13" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE (1)

1. Start the engine.
2. Perform the active test item "STOP LAMP" with CONSULT-III.
3. Perform "All DTC Reading".
4. Check if the "C1A13" is detected as the current malfunction in the self-diagnosis results of "ICC".

Is "C1A13" detected as the current malfunction?

- YES >> Refer to [CCS-231, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (2)

1. Drive at the vehicle speed of 40 km/h (25 MPH) or more for approximately 20 seconds or more without the brake pedal depressed.

CAUTION:

Always drive safely.

NOTE:

If it is outside the above conditions, repeat the step 1.

2. Perform "All DTC Reading".
3. Check if the "C1A13" is detected as the current malfunction in the self-diagnosis results of "ICC".

Is "C1A13" detected as the current malfunction?

- YES >> Refer to [CCS-231, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902450

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A13" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> GO TO 12.
- NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 3.
- NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9.

3.CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Adjust ICC brake switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

4.CHECK ICC BRAKE SWITCH

1. Disconnect ICC brake switch connector.
2. Check ICC brake switch. Refer to [CCS-217, "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace ICC brake switch.

5.CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
3	4	Existed

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Replace ICC brake hold relay.

6.CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ICC BRAKE SWITCH

1. Check for continuity between ICC brake hold relay harness connector and ICC brake switch harness connector.

ICC brake hold relay		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
E91	4	E114	1	Existed

2. Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E91	4		Not existed

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair the harnesses or connectors.

7.CHECK HARNESS BETWEEN ECM AND ICC BRAKE SWITCH

1. Disconnect ECM connector.

C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- Check for continuity between the ECM harness connector and ICC brake switch harness connector.

VQ35HR

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M107	126	E114	2	Existed

VK50VE

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M160	117	E114	2	Existed

- Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	126		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	117		Not existed

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harnesses or connectors.

8. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

- Connect ECM connector.
- Turn the ignition switch ON.
- Check the voltage between ICC brake hold relay harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
ICC brake hold relay			Ground
Connector	Terminal		
E91	3		
			Battery voltage

Is the inspection result normal?

YES >> GO TO 20.

NO >> Repair ICC brake hold relay power supply circuit.

9. CHECK STOP LAMP FOR ILLUMINATION

- Turn the ignition switch OFF.
- Remove ICC brake hold relay.
- Check that the stop lamp is illuminated by depressing the brake pedal to turn the stop lamp ON.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Check the stop lamp circuit, and repair or replace the malfunctioning parts.

10. CHECK ICC BRAKE HOLD RELAY CIRCUIT

- Connect ICC brake hold relay.
- Disconnect the stop lamp switch connector.
- Check that the stop lamp does not illuminate when brake pedal is not depressed.

Is the inspection result normal?

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C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 20.
NO >> GO TO 11.

11. CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
6	7	Not existed

Is the inspection result normal?

- YES >> GO TO 20.
NO >> Replace ICC brake hold relay.

12. CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Disconnect brake booster control unit connector and remove ICC brake hold relay.
3. Check for continuity between the brake booster control unit harness connector and ICC brake hold relay harness connector.

Brake booster control unit		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
B249	47	E91	1	Existed

4. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B249	47		Not existed

Is the inspection result normal?

- YES >> GO TO 13.
NO >> Repair the harnesses or connectors.

13. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND GROUND

Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E91	2		Existed

Is the inspection result normal?

- YES >> GO TO 14.
NO >> Repair the harnesses or connectors.

14. CHECK ICC BRAKE HOLD RELAY

Check resistance between ICC brake hold relay terminals.

ICC brake hold relay		Resistance
Terminal		
1	2	Approx. 75 Ω

Is the inspection result normal?

- YES >> GO TO 15.
NO >> Replace ICC brake hold relay.

C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

15. CHECK BRAKE BOOSTER CONTROL UNIT OUTPUT VOLTAGE

1. Connect the brake booster control unit connector.
2. Turn ignition switch ON.
3. Perform "STOP LAMP" on "Active Test" of "ICC", and then check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ICC brake hold relay		Active Test item "STOP LAMP"	0 V
Connector	Terminal		
E91	1	Off	Battery voltage
		On	

Is the inspection result normal?

YES >> GO TO 16.

NO >> GO TO 21.

16. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ICC brake hold relay		Ground	Battery voltage
Connector	Terminal		
E91	7		

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace ICC brake hold relay power supply circuit.

17. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors.
2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector.

VQ35HR

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E91	6	M107	122	Existed

VK50VE

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E91	6	M160	110	Existed

3. Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E91	6		Not existed

Is the inspection result normal?

YES >> GO TO 18.

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C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harnesses or connectors.

18.CHECK ICC BRAKE HOLD RELAY

1. Connect ECM, rear combination lamp, and high-mounted stop lamp connectors and ICC brake hold relay.
2. Disconnect the stop lamp switch connector.
3. Turn ignition switch ON.
4. Perform "STOP LAMP" on "Active Test" of "ICC", and then check the stop lamp for illumination.

Is the inspection result normal?

YES >> GO TO 19.

NO >> Replace ICC brake hold relay.

19.CHECK ICC BRAKE SWITCH STANDARD VOLTAGE

1. Turn ignition switch OFF.
2. Connect the stop lamp switch connector.
3. Turn ignition switch ON.
4. Perform "STOP LAMP" on "Active Test" of "ICC", and then check the voltage between ICC brake switch harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ICC brake switch		Active Test item "STOP LAMP"	Battery voltage
Connector	Terminal		
E114	1	Off	0 V
		On	0 V

Is the inspection result normal?

YES >> GO TO 20.

NO >> Replace ICC brake hold relay.

20.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> GO TO 21.

21.CHECK ICC BRAKE HOLD RELAY DRIVE SIGNAL OUTPUT

1. Select the active test item "STOP LAMP" of "ICC".
2. Check that "STP LMP DRIVE" is turned ON when operating the test item.

Is the inspection result normal?

YES >> Replace brake booster control unit.

NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Component Inspection

INFOID:000000003902451

1.CHECK ICC BRAKE HOLD RELAY

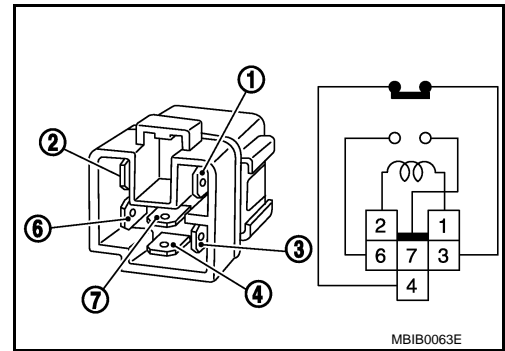
C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Apply battery voltage to ICC brake hold relay terminals 1 and 2, and then check for continuity under the following conditions.

Condition	Terminal		Continuity
When the battery voltage is applied	3	4	Not existed
	6	7	Existed
When the battery voltage is not applied	3	4	Existed
	6	7	Not existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ICC brake hold relay.

Special Repair Requirement

INFOID:000000003902452

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

C1A14 ECM

Description

INFOID:000000003902453

ECM transmits the accelerator pedal position signal, ICC brake switch signal, stop lamp switch signal, etc. to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902454

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	<ul style="list-style-type: none"> Accelerator pedal position sensor ECM ICC sensor integrated unit

NOTE:

If DTC "C1A14" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Operate the ICC system and drive.
 - CAUTION:**
Always drive safely.
- Stop the vehicle.
- Perform "All DTC Reading" with CONSULT-III.
- Check if the "C1A14" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A14" detected as the current malfunction?

- YES >> Refer to [CCS-238, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902455

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A14" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902456

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

< DTC/CIRCUIT DIAGNOSIS >

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A15 GEAR POSITION

Description

INFOID:000000003902457

ICC sensor integrated unit judges the gear position based on the following signals.

- Shift position signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from input speed signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from the vehicle speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:000000003902458

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A15 (15)	GEAR POSITION	If a mismatch occurs between an shift position signal transmitted from TCM via CAN communication and the gear position calculated by ICC sensor integrated unit	<ul style="list-style-type: none">• Input speed sensor• Vehicle speed sensor A/T (output speed sensor)• TCM

NOTE:

If DTC "C1A15" is detected along with DTC "U1000", "C1303" or "C1A04", first diagnose the DTC "U1000", "C1A03" or "C1A04".

- Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [CCS-210, "DTC Logic"](#) for DTC "C1A03".
- Refer to [CCS-212, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT-III.
6. Check if the "C1A15" is detected as the current malfunction in the self-diagnosis results of "ICC".

Is "C1A15" detected as the current malfunction?

YES >> Refer to [CCS-240, "Diagnosis Procedure"](#).

NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902459

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A03", "C1A04", or "U1000" is detected other than "C1A15" in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-330, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK VEHICLE SPEED SIGNAL

Check that "VHCL SPEED SE" operates normally in "DATA MONITOR" of "ICC".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 7.

C1A15 GEAR POSITION

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

3. CHECK GEAR POSITION

Check that "GEAR" operates normally in "DATA MONITOR" of "ICC".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK GEAR POSITION SIGNAL

Check that "GEAR" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 6.

5. CHECK INPUT SPEED SENSOR SIGNAL

Check that "INPUT SPEED" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

NO >> GO TO 6.

6. CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".

2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).

NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

7. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".

2. Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).

NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902460

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)

2. Check that the DCA system is normal.

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

>> WORK END

C1A16 RADAR STAIN

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A16 RADAR STAIN

Description

INFOID:000000003902461

ICC sensor integrated unit detects the reflected light from the vehicle ahead by irradiating a laser beam forward. It calculates the distance from and relative speed with the vehicle ahead based on the detected signal.

DTC Logic

INFOID:000000003902462

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A16 (16)	RADAR STAIN	If any stain occurs to ICC sensor integrated unit body window	<ul style="list-style-type: none">• Stain or foreign materials is deposited• Cracks or scratches exist

NOTE:

DTC "C1A16" may be detected under the following conditions. (Explain to the customer about the difference between the contamination detection function and the indication when the error is detected and tell them "This is not malfunction".)

- When contamination or foreign materials adhere on the ICC sensor integrated unit body window
- When driving while it is snowing or when frost forms on the ICC sensor integrated unit body window
- When the ICC sensor integrated unit body window is temporarily fogged

Diagnosis Procedure

INFOID:000000003902463

1. VISUAL CHECK 1

Check ICC sensor integrated unit body window for contamination and foreign materials.

Does contamination or foreign materials adhere?

- YES >> Wipe out the contamination and foreign materials from the ICC sensor integrated unit body window.
- NO >> GO TO 2.

2. VISUAL CHECK 2

Check ICC sensor integrated unit body window for cracks and scratches.

Is it found?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
- NO >> GO TO 3.

3. INTERVIEW

1. Ask if there is any trace of contamination or foreign materials adhering to the ICC sensor integrated unit body window.
2. Ask if ICC sensor integrated unit body window was frosted during driving or if vehicle was driven in snow.
3. Ask if ICC sensor integrated unit body window was temporarily fogged. (Front window glass may also tend to fog, etc.)

What is the result of the interview with the customer?

- YES >> Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902464

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

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CCS

C1A16 RADAR STAIN

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A18 LASER AIMING INCMP

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A18 LASER AIMING INCMP

Description

INFOID:000000003902465

Always perform the laser beam aiming adjustment after replacing the ICC sensor integrated unit.

DTC Logic

INFOID:000000003902466

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A18 (18)	LASER AIMING IN-CMP	Laser beam aiming of ICC sensor integrated unit is not adjusted	<ul style="list-style-type: none">No laser beam aiming adjustment is performedLaser beam aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A18" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A18" detected as the current malfunction?

- YES >> Refer to [CCS-245, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000003902467

1. ADJUST LASER BEAM AIMING

1. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).
2. Erase All self-diagnosis results with CONSULT-III.
3. Perform "All DTC Reading".
4. Check if the "C1A18" is detected in "Self Diagnostic Result" of "ICC".

Is "C1A18" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902468

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

C1A18 LASER AIMING INCOMP

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

1. Erase the “self-diagnosis results”, and then perform “All DTC Reading” again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A21 UNIT HIGH TEMP

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A21 UNIT HIGH TEMP

Description

INFOID:000000003902469

ICC sensor integrated unit integrates the temperature sensor.

DTC Logic

INFOID:000000003902470

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A21 (21)	UNIT HIGH TEMP	If the temperature sensor (integrated in the ICC sensor integrated unit) detects a high temperature	Temperature around ICC sensor integrated unit is excessively high

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Wait for 10 minutes or more and cool the ICC sensor integrated unit.
3. Start the engine.
4. Turn the DCA switch ON.
5. Perform "All DTC Reading" with CONSULT-III.
6. Check if the "C1A21" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A21" detected as the current malfunction?

- YES >> Refer to [CCS-247, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902471

1. CHECK ENGINE COOLING SYSTEM

Check for any malfunctions in engine cooling system.

Is engine cooling system normal?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
NO >> Repair engine cooling system.

Special Repair Requirement

INFOID:000000003902472

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

C1A21 UNIT HIGH TEMP

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

>> WORK END

C1A22 BCU CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A22 BCU CIRCUIT

Description

INFOID:000000003902473

- The brake booster control unit receives the brake fluid pressure command signal from ICC sensor integrated unit via ITS communication and activates the booster solenoid to operate the brake booster.
- The brake booster adjusts the brake fluid pressure by driving the booster solenoid.
- The brake pedal is controlled when the brake booster adjusts the brake fluid pressure.

DTC Logic

INFOID:000000003902474

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A22 (22)	BCU CIRCUIT	If the brake booster control unit cannot control the brake booster	<ul style="list-style-type: none">• Stop lamp switch circuit• ICC brake switch circuit• Stop lamp switch• ICC brake switch• Incorrect stop lamp switch installation• Incorrect ICC brake switch installation• ECM• Brake booster control unit

NOTE:

If DTC "C1A22" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A22" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A22" detected as the current malfunction?

- YES >> Refer to [CCS-249, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902475

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A05" or "U1000" is detected other than "C1A22" in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-330, "DTC Index"](#).
NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> GO TO 10.
NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 3.
NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 5.

3. CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn the ignition switch OFF.
2. Check ICC brake switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

C1A22 BCU CIRCUIT

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 4.

NO >> Adjust ICC brake switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

4. ICC BRAKE SWITCH INSPECTION

1. Disconnect ICC brake switch connector.

2. Check ICC brake switch. Refer to [CCS-217, "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ICC brake switch.

5. CHECK STOP LAMP FOR ILLUMINATION

Check stop lamp illumination.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the stop lamp circuit, and repair or replace the malfunctioning parts.

6. CHECK ICC BRAKE HOLD RELAY

1. Turn the ignition switch OFF.

2. Remove ICC brake hold relay.

3. Check for continuity between ICC brake hold relay terminals.

ICC brake hold relay		Continuity
Terminal		
3	4	Existed
6	7	Not existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace ICC brake hold relay.

7. CHECK HARNESS BETWEEN ECM AND ICC BRAKE HOLD RELAY

1. Disconnect ECM connector.

2. Check for continuity between the ECM harness connector and ICC brake hold relay harness connector.

VQ35HR

ECM		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
M107	122	E91	6	Existed

VK50VE

ECM		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
M160	110	E91	6	Existed

3. Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	122		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	110		Not existed

Is the inspection result normal?

C1A22 BCU CIRCUIT

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 8.
NO >> Repair the harnesses or connectors.

8. CHECK HARNESS BETWEEN ECM AND ICC BRAKE SWITCH

1. Check for continuity between the ECM harness connector and ICC brake switch harness connector.

VQ35HR

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M107	126	E114	2	Existed

VK50VE

ECM		ICC brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M160	117	E114	2	Existed

2. Check for continuity between ECM harness connector and ground.

VQ35HR

ECM		Ground	Continuity
Connector	Terminal		
M107	126		Not existed

VK50VE

ECM		Ground	Continuity
Connector	Terminal		
M160	117		Not existed

Is the inspection result normal?

- YES >> GO TO 9.
NO >> Repair the harnesses or connectors.

9. CHECK HARNESS BETWEEN ICC BRAKE SWITCH AND ICC BRAKE HOLD RELAY

1. Disconnect ICC brake switch connector.
2. Check for continuity between ICC brake switch harness connector and ICC brake hold relay harness connector.

ICC brake switch		ICC brake hold relay		Continuity
Connector	Terminal	Connector	Terminal	
E114	1	E91	4	Existed

3. Check for continuity between ICC brake switch harness connector and ground.

ICC brake switch		Ground	Continuity
Connector	Terminal		
E114	1		Not existed

Is the inspection result normal?

- YES >> GO TO 10.
NO >> Repair the harnesses or connectors.

10. PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn the ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

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CCS

C1A22 BCU CIRCUIT

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).
- NO >> Replace the brake booster control unit.

Special Repair Requirement

INFOID:000000003902476

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A24 NP RANGE

Description

INFOID:000000003902477

ICC sensor integrated unit judges the NP position status from the shift position signal and current gear position signal received from TCM via CAN communication.

DTC Logic

INFOID:000000003902478

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	If the shift position signal and the current gear position signal, transmitted from TCM via CAN communication, are inconsistent	<ul style="list-style-type: none">• TCM• Transmission range switch

NOTE:

If DTC "C1A24" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE (1)

1. Start the engine.
2. Turn the DCA switch ON.
3. Wait for approximately 5 minutes or more after shifting the selector lever to "P" position.
4. Perform "All DTC Reading" with CONSULT-III.
5. Check if the "C1A24" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [CCS-253, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (2)

1. Wait for approximately 5 minutes or more after shifting the selector lever to "N" position.
2. Perform "All DTC Reading".
3. Check if the "C1A24" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [CCS-253, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902479

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A24" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK NP POSITION SWITCH SIGNAL

Check that "NP RANGE SW" operates normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

3. CHECK TCM DATA MONITOR

Check that "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

C1A24 NP RANGE

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
NO >> GO TO 4.

4.PERFORM TCM SELF-DIAGNOSIS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902480

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A28 BCU POWER SUPPLY CIRCUIT, C1A29 BCU POWER SUPPLY CIRCUIT2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A28 BCU POWER SUPPLY CIRCUIT, C1A29 BCU POWER SUPPLY CIRCUIT2

Description

INFOID:000000003902481

The brake booster control unit controls the brake booster, etc. with the battery power supply and ignition power supply.

DTC Logic

INFOID:000000003902482

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A28 (28)	BCU PWR SUPPLY CIR	The brake booster control unit power supply voltage is excessively low (less than 8 V).	<ul style="list-style-type: none">• Brake booster control unit• Harness, connector, fuse
C1A29 (29)	BCU PWR SUPPLY CIR2	The brake booster control unit power supply voltage is excessively high (more than 19 V).	

NOTE:

If DTC "C1A28" or "C1A29" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A28" or "C1A29" is detected as the current malfunction in self-diagnosis results.

Is "C1A28" or "C1A29" detected as the current malfunction?

- YES >> Refer to [CCS-255, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902483

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A28", "C1A29" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BRAKE BOOSTER CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check brake booster control unit power supply and ground circuit. Refer to [CCS-311, "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace the brake booster control unit.
NO >> Repair brake booster control unit power supply and ground circuit.

Special Repair Requirement

INFOID:000000003902484

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

C1A28 BCU POWER SUPPLY CIRCUIT, C1A29 BCU POWER SUPPLY CIRCUIT2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

-
1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
 2. Check that the DCA system is normal.

>> WORK END

C1A30 BCU CAN COMM CIRC

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A30 BCU CAN COMM CIRC

Description

INFOID:000000003902485

The brake booster control unit communicates with ICC sensor integrated unit for brake booster control via ITS communication.

DTC Logic

INFOID:000000003902486

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A30 (30)	BCU CAN COMM CIRC	If ICC sensor integrated unit receives the signal for improper condition for brake booster control unit via ITS communication	ITS communication system

Diagnosis Procedure

INFOID:000000003902487

1. PERFORM THE SELF-DIAGNOSIS

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A30" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A30" detected as the current malfunction?

- YES >> Perform trouble diagnosis for the ITS communication system. Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).
- NO >> Refer to [GI-35. "Intermittent Incident"](#).

Special Repair Requirement

INFOID:000000003902488

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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C1A31 BCU INTERNAL MALF

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A31 BCU INTERNAL MALF

Description

INFOID:000000003902489

The brake booster control unit inputs the brake fluid pressure control signal and release switch signal and transmits them to ICC sensor integrated unit via ITS communication. Also, it receives the brake fluid pressure command signal from ICC sensor integrated unit via ITS communication and activates the booster solenoid to operate the brake booster (brake).

DTC Logic

INFOID:000000003902490

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A31 (31)	BCU INTERNAL MALF	Brake booster control unit internal malfunction	Brake booster control unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A31" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A31" detected as the current malfunction?

- YES >> Refer to [CCS-258, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902491

1. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A31" is detected in "Self Diagnostic Result" of "ICC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-330, "DTC Index"](#).
NO >> Replace the brake booster control unit.

Special Repair Requirement

INFOID:000000003902492

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)

C1A31 BCU INTERNAL MALF

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

2. Check that the DCA system is normal.

>> WORK END

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C1A32 IBA FLAG STUCK

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A32 IBA FLAG STUCK

Description

INFOID:000000003902493

ICC sensor integrated unit shares components with the IBA system.

DTC Logic

INFOID:000000003902494

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A32 (32)	IBA FLAG STUCK	If the control (detection) of IBA is malfunctioning	<ul style="list-style-type: none">• ICC sensor integrated unit• Brake booster control unit

NOTE:

If DTC "C1A32" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306. "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON, and wait for 5 minutes or more.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A32" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A32" detected as the current malfunction?

- YES >> Refer to [CCS-260. "Diagnosis Procedure"](#).
NO >> Refer to [GI-35. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902495

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A32" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-306. "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Replace the brake booster control unit.
3. Erases All self-diagnosis results.
4. Perform DTC confirmation procedure. Refer to [CCS-260. "DTC Logic"](#).
5. Perform "All DTC Reading".
6. Check if the "C1A32" is detected in "Self Diagnostic Result" of "ICC".

Is "C1A32" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363. "Exploded View"](#).
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902496

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

C1A32 IBA FLAG STUCK

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

C1A33 CAN TRANSMISSION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A33 CAN TRANSMISSION ERROR

Description

INFOID:000000003902497

ICC sensor integrated unit transmits the signal required by the DCA system control to ECM via CAN communication.

DTC Logic

INFOID:000000003902498

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A33 (33)	CAN TRANSMISSION ERROR	If an error occurs in the CAN communication signal that ICC sensor integrated unit transmits to ECM	ICC sensor integrated unit

NOTE:

If DTC "C1A33" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A33" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A33" detected as the current malfunction?

- YES >> Refer to [CCS-262, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902499

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A33" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902500

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

C1A33 CAN TRANSMISSION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

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>> WORK END

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C1A34 COMMAND ERROR

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

C1A34 COMMAND ERROR

Description

INFOID:000000003902501

ICC sensor integrated unit transmits the command signal required for the ECM control via CAN communication.

DTC Logic

INFOID:000000003902502

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A34 (34)	COMMAND ERROR	If an error occurs in the command signal that ICC sensor integrated unit transmits to ECM via CAN communication	ICC sensor integrated unit

NOTE:

If DTC "C1A34" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Operate the ICC system and drive.
CAUTION:
Always drive safely.
3. Stop the vehicle.
4. Perform "All DTC Reading" with CONSULT-III.
5. Check if the "C1A34" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A34" detected as the current malfunction?

- YES >> Refer to [CCS-264, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902503

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A34" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902504

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

C1A34 COMMAND ERROR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

C1A35 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A35 ACCELERATOR PEDAL ACTUATOR

Description

INFOID:000000003902505

- The accelerator pedal actuator is integrated into the accelerator pedal assembly.
- The accelerator pedal actuator consists of the control unit and motor.

DTC Logic

INFOID:000000003902506

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A35 (35)	APA CIR	If the accelerator pedal actuator is malfunctioning	Accelerator pedal actuator

Diagnosis Procedure

INFOID:000000003902507

1.PERFORM THE SELF-DIAGNOSIS

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A35" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A35" detected as the current malfunction?

- YES >> Replace the accelerator pedal assembly.
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902508

DESCRIPTION

The accelerator pedal released position learning is necessary when the following operation is performed.

- Disconnection and connection of accelerator pedal assembly connector
- Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the accelerator pedal released position learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

Description

INFOID:000000003902509

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting ICC sensor integrated unit, brake booster control unit, and accelerator pedal actuator with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:000000003902510

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A36 (36)	APA CAN COMM CIR	If an error occurs in the signal that the accelerator pedal actuator transmits via ITS communication	<ul style="list-style-type: none">• ICC sensor integrated unit• Accelerator pedal actuator• ITS communication system

NOTE:

If DTC "C1A36" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A36" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A36" detected as the current malfunction?

- YES >> Refer to [CCS-267, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902511

1. CHECK ICC SENSOR INTEGRATED UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A36" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if the DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-347, "DTC Index"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902512

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

Check the operation after performing the accelerator pedal released position learning when the following operation is performed.

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C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- Disconnection and connection of accelerator pedal position sensor connector
- Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1. CHECK CONTROL UNIT REPLACED, REMOVED AND/OR INSTALLED

Perform the adjustment work after the replacement or removal and installation of ICC sensor integrated unit, replacement of accelerator pedal assembly, or disconnection or connection of accelerator pedal position sensor connector.

Which is replaced, removed or installed?

ICC sensor integrated unit>>GO TO 2.

Accelerator pedal assembly>>GO TO 3.

2. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 4.

3. ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the Accelerator Pedal Released Position Learning. Refer to [EC-25. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 4.

4. CHECK DCA SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

Description

INFOID:000000003902513

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting ICC sensor integrated unit, brake booster control unit, and accelerator pedal actuator with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:000000003902514

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A37 (133)	APA CAN CIR2	If ICC sensor integrated unit detects an error signal that is received from accelerator pedal actuator via ITS communication	Accelerator pedal actuator malfunction

NOTE:

If DTC "C1A37" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A37" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A37" detected as the current malfunction?

- YES >> Refer to [CCS-269, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902515

1. CHECK ICC SENSOR INTEGRATED UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A37" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Turn the ignition switch OFF.
2. Replace the accelerator pedal assembly.
3. Turn the ignition switch ON.
4. Erases All self-diagnosis results.
5. Perform "All DTC Reading" again.
6. Check if the DTC "C1A37" is detected in self-diagnosis results of "ICC".

Is "C1A37" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902516

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

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C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- Removal and installation of ICC sensor integrated unit
 - Replacement of ICC sensor integrated unit
- Check the operation after performing the accelerator pedal released position learning when the following operation is performed.
- Disconnection and connection of accelerator pedal position sensor connector
 - Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1.CHECK CONTROL UNIT REPLACED, REMOVED AND/OR INSTALLED

Perform the adjustment work after the replacement or removal and installation of ICC sensor integrated unit, replacement of accelerator pedal assembly, or disconnection or connection of accelerator pedal position sensor connector.

Which is replaced, removed or installed?

ICC sensor integrated unit>>GO TO 2.

Accelerator pedal assembly>>GO TO 3.

2.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 4.

3.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the Accelerator Pedal Released Position Learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 4.

4.CHECK DCA SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

Description

INFOID:000000003902517

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting ICC sensor integrated unit, brake booster control unit, and accelerator pedal actuator with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:000000003902518

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A38 (132)	APA CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from accelerator pedal actuator via ITS communication	Accelerator pedal actuator malfunction

NOTE:

If DTC "C1A38" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A38" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A38" detected as the current malfunction?

- YES >> Refer to [CCS-271, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902519

1. CHECK ICC SENSOR INTEGRATED UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A38" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Turn the ignition switch OFF.
2. Replace the accelerator pedal assembly.
3. Erases All self-diagnosis results.
4. Perform "All DTC Reading" again.
5. Check if the "C1A38" is detected in self-diagnosis results of "ICC".

Is "C1A38" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902520

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit

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C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- Replacement of ICC sensor integrated unit
- Check the operation after performing the accelerator pedal released position learning when the following operation is performed.
- Disconnection and connection of accelerator pedal position sensor connector
 - Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1.CHECK CONTROL UNIT REPLACED, REMOVED AND/OR INSTALLED

Perform the adjustment work after the replacement or removal and installation of ICC sensor integrated unit, replacement of accelerator pedal assembly, or disconnection or connection of accelerator pedal position sensor connector.

Which is replaced, removed or installed?

ICC sensor integrated unit>>GO TO 2.

Accelerator pedal assembly>>GO TO 3.

2.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 4.

3.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the Accelerator Pedal Released Position Learning. Refer to [EC-25. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 4.

4.CHECK DCA SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A39 STEERING ANGLE SENSOR

Description

INFOID:000000003902521

It measures the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902522

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39 (39)	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor is malfunction

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1A39" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to [CCS-273, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902523

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902524

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

C1A39 STEERING ANGLE SENSOR

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1A40 SYSTEM SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A40 SYSTEM SWITCH CIRCUIT

Description

INFOID:000000003960130

DCA SWITCH

- The DCA system ON/OFF operation is performed by the DCA switch.
- The DCA switch signal is input to the brake booster control unit, and transmitted from the brake booster control unit to the ICC sensor integrated unit via ITS communication.

IBA OFF SWITCH

- The IBA ON/OFF operation is performed by IBA OFF switch.
- The IBA OFF switch signal is input to the brake booster control unit and transmits from the brake booster control unit to the ICC sensor integrated unit via ITS communication.

DTC Logic

INFOID:000000003960131

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A40 (40)	SYSTEM SW CIRC	If the DCA switch or the IBA OFF switch is stuck to ON	<ul style="list-style-type: none">• DCA switch circuit• DCA switch• IBA OFF switch circuit• IBA OFF switch• Brake booster control unit

NOTE:

If DTC "C1A40" is displayed along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine and wait for approximately 10 minutes or more.
2. Perform "All DTC Reading" with CONSULT-III.
3. Check if the "C1A40" is detected as the current malfunction in "Self Diagnostic Result" of "ICC".

Is "C1A40" detected as the current malfunction?

- YES >> Refer to [CCS-275, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003960132

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A40" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK DATA MONITOR

Check that "DCA ON SW" and "IBA SW" operate normally in "DATA MONITOR" of "ICC".

Is the inspection result normal?

- YES >> Refer to [GI-35, "Intermittent Incident"](#).
NO-1 >> When "DCA ON SW" is malfunctioning: GO TO 3
NO-2 >> When "IBA SW" is malfunctioning: GO TO 7

3. CHECK DCA SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the DCA switch connector.

C1A40 SYSTEM SWITCH CIRCUIT

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

3. Check the DCA switch. Refer to [CCS-277, "Component Inspection \(DCA Switch\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the DCA switch.

4.CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND DCA SWITCH

1. Disconnect brake booster control unit connector.
2. Check for continuity between brake booster control unit harness connector and DCA switch harness connector.

Brake booster control unit		DCA switch		Continuity
Connector	Terminal	Connector	Terminal	
B250	9	M18	1	Existed

3. Check for continuity between brake booster control unit and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	9		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5.CHECK DCA SWITCH GROUND CIRCUIT

Check for continuity between DCA switch harness connector and ground.

DCA switch		Ground	Continuity
Connector	Terminal		
M18	2		Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair the harnesses or connectors.

6.CHECK DCA SWITCH SIGNAL

1. Connect the brake booster control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between brake booster control unit harness connector and ground.

Terminals			Voltage (Approx.)	
(+) (+)		(-) (-)		
Brake booster control unit			Ground	Battery voltage
Connector	Terminal			
B250	9			

Is the inspection result normal?

YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

NO >> Replace the brake booster control unit.

7.CHECK IBA OFF SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the IBA OFF switch connector.
3. Check the IBA OFF switch. Refer to [CCS-278, "Component Inspection \(IBA OFF Switch\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

C1A40 SYSTEM SWITCH CIRCUIT

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the IBA OFF switch.

8. CHECK HARNESS BETWEEN BRAKE BOOSTER CONTROL UNIT AND IBA OFF SWITCH

1. Disconnect brake booster control unit connector.
2. Check for continuity between the brake booster control unit harness connector and IBA OFF switch harness connector.

Brake booster control unit		IBA OFF switch		Continuity
Connector	Terminal	Connector	Terminal	
B249	40	M184	7	Existed

3. Check for continuity between brake booster control unit and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B249	40		Not existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair the harnesses or connectors.

9. CHECK IBA OFF SWITCH GROUND CIRCUIT

Check for continuity between IBA OFF switch harness connector and ground.

IBA OFF switch		Ground	Continuity
Connector	Terminal		
M184	6		Exists

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair the harnesses or connectors.

10. CHECK IBA OFF SWITCH SIGNAL

1. Connect the brake booster control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between brake booster control unit harness connector and ground.

Terminals		Ground	Voltage (Approx.)
(+)	(-)		
Brake booster control unit			Battery voltage
Connector	Terminal		
B249	40		

Is the inspection result normal?

YES >> Replace ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

NO >> Replace the brake booster control unit.

Component Inspection (DCA Switch)

INFOID:000000003960133

1. CHECK DCA SWITCH

Check for continuity of DCA switch.

Terminal	Condition	Continuity
1	2 When the DCA switch is pressed	Existed
	When the DCA switch is released	Not existed

C1A40 SYSTEM SWITCH CIRCUIT

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the DCA switch.

Component Inspection (IBA OFF Switch)

INFOID:000000003960134

1.CHECK IBA OFF SWITCH

Check for continuity of IBA OFF switch.

Terminal	Condition	Continuity	
6	7	When the IBA OFF switch is pressed	Existed
		When the IBA OFF switch is released	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the IBA OFF switch.

Special Repair Requirement

INFOID:000000003902424

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1F01 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F01 ACCELERATOR PEDAL ACTUATOR

Description

INFOID:000000003902525

- The accelerator pedal actuator is integrated into the accelerator pedal assembly.
- The accelerator pedal actuator consists of the control unit and motor.

DTC Logic

INFOID:000000003902526

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F01 (91)	APA MOTOR MALF	If the accelerator pedal actuator motor error is detected	Accelerator pedal actuator integrated motor malfunction

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON.
3. Slowly depress the accelerator pedal completely, and then release it.
4. Repeat step 3 several times.
5. Perform "All DTC Reading" with CONSULT-III.
6. Check if the DTC "C1F01" is detected as the current malfunction on the self-diagnosis results of "ICC" or "ACCELE PEDAL ACT".

Is "C1F01" detected as the current malfunction?

- YES >> Refer to [CCS-279, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902527

1.REPLACE ACCELERATOR PEDAL ASSEMBLY

Perform DTC confirmation procedure. If "C1F01" is detected as the current malfunction, replace the accelerator pedal assembly. Refer to [CCS-279, "DTC Logic"](#).

>> INSPECTION END

Special Repair Requirement

INFOID:000000003902528

DESCRIPTION

The accelerator pedal released position learning is necessary when the following operation is performed.

- Disconnection and connection of accelerator pedal assembly connector
- Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the accelerator pedal released position learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

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C1F01 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

>> WORK END

C1F02 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F02 ACCELERATOR PEDAL ACTUATOR

Description

INFOID:000000003902529

- The accelerator pedal actuator is integrated into the accelerator pedal assembly.
- The accelerator pedal actuator consists of the control unit and motor.

DTC Logic

INFOID:000000003902530

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F02 (92)	APA C/U MALF	If the accelerator pedal actuator integrated control unit error is detected	Accelerator pedal actuator integrated control unit malfunction

Diagnosis Procedure

INFOID:000000003902531

1.PERFORM THE SELF-DIAGNOSIS

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the DTC "C1F02" is detected as the current malfunction on the self-diagnosis results of "ICC" or "ACCELE PEDAL ACT".

Is "C1F02" detected as the current malfunction?

- YES >> Replace the accelerator pedal assembly.
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902532

DESCRIPTION

The accelerator pedal released position learning is necessary when the following operation is performed.

- Disconnection and connection of accelerator pedal assembly connector
- Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the accelerator pedal released position learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

C1F03 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F03 ACCELERATOR PEDAL ACTUATOR

Description

INFOID:000000003902533

The accelerator pedal actuator is integrated into with a temperature sensor.

DTC Logic

INFOID:000000003902534

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F03	APA HI TEMP	If the accelerator pedal actuator integrated motor temperature is excessively high	Accelerator pedal actuator integrated motor malfunction

NOTE:

When the accelerator pedal actuator operates excessively, "C1F03" may be detected temporarily.

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Wait for 10 minutes or more and cool the accelerator pedal actuator integrated motor.
3. Drive the vehicle with DCA switch ON and operate the system.
CAUTION:
Always drive safely.
4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT-III.
6. Check if the DTC "C1F03" is detected as the current malfunction in self-diagnosis results of "ACCELERATOR PEDAL ACT".

Is "C1F03" detected as the current malfunction?

- YES >> Refer to [CCS-282, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902535

1. REPLACE ACCELERATOR PEDAL ASSEMBLY

Perform DTC confirmation procedure. If "C1F03" is detected, replace the accelerator pedal assembly. Refer to [CCS-282, "DTC Logic"](#).

>> INSPECTION END

Special Repair Requirement

INFOID:000000003902536

DESCRIPTION

The accelerator pedal released position learning is necessary when the following operation is performed.

- Disconnection and connection of accelerator pedal assembly connector
- Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1. ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the accelerator pedal released position learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 2.

2. CHECK DCA SYSTEM

C1F03 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

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>> WORK END

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C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

Description

INFOID:000000003902537

Power is supplied from ignition power supply and battery power supply to the accelerator pedal actuator.

DTC Logic

INFOID:000000003902538

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F05 (95)	APA PWR SUPPLY CIR	The voltage input to accelerator pedal actuator is excessively low (approximately 8 V or less) or excessively high (approximately 19 V or more).	<ul style="list-style-type: none">• Harness, connector, or fuse• Accelerator pedal actuator

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1F05" is detected as the current malfunction on the self-diagnosis results of "ICC" or "ACCELE PEDAL ACT".

Is "C1F05" detected as the current malfunction?

YES >> Refer to [CCS-284, "Diagnosis Procedure"](#).

NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902539

1. CHECK POWER SUPPLY CIRCUIT

Check the accelerator pedal actuator power supply circuit. Refer to [CCS-312, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the accelerator pedal assembly.

NO >> Repair or replace the malfunctioning parts.

Special Repair Requirement

INFOID:000000003902540

DESCRIPTION

The accelerator pedal released position learning is necessary when the following operation is performed.

- Disconnection and connection of accelerator pedal assembly connector
- Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1. ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the accelerator pedal released position learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

>> WORK END

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C1F06 CAN CIRCUIT2

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

C1F06 CAN CIRCUIT2

Description

INFOID:000000003902541

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting ICC sensor integrated unit, brake booster control unit, and accelerator pedal actuator with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:000000003902542

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F06	CAN CIR 2	If accelerator pedal actuator detects an error signal that is received from ICC sensor integrated unit via ITS communication	ICC sensor integrated unit malfunction

NOTE:

If DTC "C1F06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306. "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1F06" is detected as the current malfunction in self-diagnosis results of "ACCELE PEDAL ACT".

Is "C1F06" detected as the current malfunction?

- YES >> Refer to [CCS-286. "Diagnosis Procedure"](#).
NO >> Refer to [GI-35. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902543

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F06" in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-306. "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ICC SENSOR INTEGRATED UNIT

1. Turn the ignition switch OFF.
2. Replace the ICC sensor integrated unit. Refer to [CCS-363. "Exploded View"](#).
3. Erases All self-diagnosis results.
4. Perform "All DTC Reading" again.
5. Check if the "C1F06" is detected in self-diagnosis results of "ACCELE PEDAL ACT".

Is "C1F06" detected?

- YES >> Replace the accelerator pedal assembly.
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902544

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

C1F06 CAN CIRCUIT2

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- Removal and installation of ICC sensor integrated unit
 - Replacement of ICC sensor integrated unit
- Check the operation after performing the accelerator pedal released position learning when the following operation is performed.
- Disconnection and connection of accelerator pedal position sensor connector
 - Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1.CHECK CONTROL UNIT REPLACED, REMOVED AND/OR INSTALLED

Perform the adjustment work after the replacement or removal and installation of ICC sensor integrated unit, replacement of accelerator pedal assembly, or disconnection or connection of accelerator pedal position sensor connector.

Which is replaced, removed or installed?

ICC sensor integrated unit>>GO TO 2.

Accelerator pedal assembly>>GO TO 3.

2.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 4.

3.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the Accelerator Pedal Released Position Learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 4.

4.CHECK DCA SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

C1F07 CAN CIRCUIT1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F07 CAN CIRCUIT1

Description

INFOID:000000003902545

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting ICC sensor integrated unit, brake booster control unit, and accelerator pedal actuator with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:000000003902546

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F07	CAN CIR 1	If accelerator pedal actuator detects an error signal that is received from ICC sensor integrated unit via ITS communication	ICC sensor integrated unit malfunction

NOTE:

If DTC "C1F07" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306. "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "C1F07" is detected as the current malfunction in self-diagnosis results of "ACCELE PEDAL ACT".

Is "C1F07" detected as the current malfunction?

- YES >> Refer to [CCS-288. "Diagnosis Procedure"](#).
NO >> Refer to [GI-35. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902547

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F07" in "Self Diagnosis Result" of "ACCELE PEDAL ACT".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [CCS-306. "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ICC SENSOR INTEGRATED UNIT

1. Turn the ignition switch OFF.
2. Replace the ICC sensor integrated unit. Refer to [CCS-363. "Exploded View"](#).
3. Erases All self-diagnosis results.
4. Perform "All DTC Reading" again.
5. Check if the "C1F07" is detected in self-diagnosis results of "ACCELE PEDAL ACT".

Is "C1F07" detected?

- YES >> Replace the accelerator pedal assembly.
NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902548

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

C1F07 CAN CIRCUIT1

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- Removal and installation of ICC sensor integrated unit
 - Replacement of ICC sensor integrated unit
- Check the operation after performing the accelerator pedal released position learning when the following operation is performed.
- Disconnection and connection of accelerator pedal position sensor connector
 - Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1. CHECK CONTROL UNIT REPLACED, REMOVED AND/OR INSTALLED

Perform the adjustment work after the replacement or removal and installation of ICC sensor integrated unit, replacement of accelerator pedal assembly, or disconnection or connection of accelerator pedal position sensor connector.

Which is replaced, removed or installed?

- ICC sensor integrated unit >> GO TO 2.
- Accelerator pedal assembly >> GO TO 3.

2. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 4.

3. ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the Accelerator Pedal Released Position Learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 4.

4. CHECK DCA SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

U0121 VDC CAN 2

Description

INFOID:000000003902549

ABS actuator and electric unit (control unit) transmits the VDC system signal to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902550

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ICC sensor integrated unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0121" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0121" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U0121" detected as the current malfunction?

- YES >> Refer to [CCS-290, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902551

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0121" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
- NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902552

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

U0121 VDC CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

U0126 STRG SEN CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U0126 STRG SEN CAN 1

Description

INFOID:000000003902553

It measures the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902554

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126 (130)	STRG SEN CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor error

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0126" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U0126" detected as the current malfunction?

- YES >> Refer to [CCS-292, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902555

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902556

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

U0126 STRG SEN CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

U0129 BCU CAN 2

Description

INFOID:000000003902557

The brake booster control unit transmits the signal related to brake control to ICC sensor integrated unit via ITS communication.

DTC Logic

INFOID:000000003902558

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0129 (125)	BCU CAN CIR 2	If ICC sensor integrated unit detects an error signal that is received from brake booster control unit via ITS communication	Brake booster control unit

NOTE:

If DTC "U0129" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0129" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U0129" detected as the current malfunction?

- YES >> Refer to [CCS-294, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902559

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0129" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. REPLACE BRAKE BOOSTER CONTROL UNIT

1. Turn ignition switch OFF.
2. Replace brake booster control unit.
3. Erases All self-diagnosis results.
4. Perform DTC confirmation procedure. Refer to [CCS-294, "DTC Logic"](#).
5. Perform "All DTC Reading".
6. Check if the "U0129" is detected in "Self Diagnostic Result" of "ICC".

Is "U0129" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
- NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902560

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

< DTC/CIRCUIT DIAGNOSIS >

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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U0401 ECM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U0401 ECM CAN 1

Description

INFOID:000000003902561

ECM transmits the signal related to engine control [DCA system] to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902562

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0401" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U0401" detected as the current malfunction?

- YES >> Refer to [CCS-296, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902563

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902564

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

U0401 ECM CAN 1

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

U0402 TCM CAN 1

Description

INFOID:000000003902565

TCM transmits the signal related to A/T control to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902566

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402 (122)	TCM CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306. "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0402" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U0402" detected as the current malfunction?

- YES >> Refer to [CCS-298. "Diagnosis Procedure"](#).
 NO >> Refer to [GI-35. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902567

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306. "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-166. "DTC Index"](#) (VQ35HR) or [TM-353. "DTC Index"](#) (VK50VE).
 NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363. "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902568

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

U0402 TCM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

U0415 VDC CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U0415 VDC CAN 1

Description

INFOID:000000003902569

ABS actuator and electric unit (control unit) transmits the signal related to the VDC system to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902570

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0415" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U0415" detected as the current malfunction?

- YES >> Refer to [CCS-300, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902571

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902572

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

U0415 VDC CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

U0418 BCU CAN 1

Description

INFOID:000000003902573

The brake booster control unit transmits the signal related to brake control to ICC sensor integrated unit via ITS communication.

DTC Logic

INFOID:000000003902574

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0418 (124)	BCU CAN CIR1	If ICC sensor integrated unit detects an error signal that is received from brake booster control unit via CAN communication	Brake booster control unit

NOTE:

If DTC "U0418" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0418" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U0418" detected as the current malfunction?

- YES >> Refer to [CCS-302, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902575

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0418" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. REPLACE BRAKE BOOSTER CONTROL UNIT

1. Turn the ignition switch OFF.
2. Replace the brake booster control unit.
3. Erases All self-diagnosis results.
4. Perform DTC confirmation procedure. Refer to [CCS-302, "DTC Logic"](#).
5. Perform "All DTC Reading".
6. Check if the "U0418" is detected in "Self Diagnostic Result" of "ICC".

Is "U0418" detected?

- YES >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
- NO >> INSPECTION END

Special Repair Requirement

INFOID:000000003902576

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

U0418 BCU CAN 1

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

U0428 STRG SEN CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U0428 STRG SEN CAN 2

Description

INFOID:000000003902577

It detects the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:000000003902578

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428 (131)	STRG SEN CAN CIR2	If ICC sensor integrated unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA switch ON.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U0428" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U0428" detected as the current malfunction?

- YES >> Refer to [CCS-304, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003902579

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "ICC".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-121, "DTC Index"](#).
NO >> Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).

Special Repair Requirement

INFOID:000000003902580

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

U0428 STRG SEN CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

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CCS

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U1000 CAN COMM CIRCUIT ICC SENSOR INTEGRATED UNIT

ICC SENSOR INTEGRATED UNIT : Description

INFOID:000000003902581

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.
CAN communication signal chart. Refer to [LAN-32, "CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting ICC sensor integrated unit, brake booster control unit, and accelerator pedal actuator with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

ICC SENSOR INTEGRATED UNIT : DTC Logic

INFOID:000000003902582

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000 (100)	CAN COMM CIRCUIT	If ICC sensor integrated unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	<ul style="list-style-type: none">• CAN communication system• ITS communication system

NOTE:

If "U1000" is detected, first diagnose the CAN communication system.

ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure

INFOID:000000003902583

1.PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the DCA switch ON, and wait for 2 seconds or more.
3. Perform "All DTC Reading" with CONSULT-III.
4. Check if the "U1000" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U1000" detected as the current malfunction?

- YES >> Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

ICC SENSOR INTEGRATED UNIT : Special Repair Requirement

INFOID:000000003902584

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

Check the operation after performing the accelerator pedal released position learning when the following operation is performed.

- Disconnection and connection of accelerator pedal position sensor connector
- Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

- 1.CHECK CONTROL UNIT REPLACED, REMOVED AND/OR INSTALLED

U1000 CAN COMM CIRCUIT

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Perform the adjustment work after the replacement or removal and installation of ICC sensor integrated unit, replacement of accelerator pedal assembly, or disconnection or connection of accelerator pedal position sensor connector.

Which is replaced, removed or installed?

- ICC sensor integrated unit>>GO TO 2.
- Accelerator pedal assembly>>GO TO 3.

2.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 4.

3.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the Accelerator Pedal Released Position Learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 4.

4.CHECK DCA SYSTEM

- Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
- Check that the DCA system is normal.

>> WORK END

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : Description

INFOID:000000003902585

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting ICC sensor integrated unit, brake booster control unit, and accelerator pedal actuator with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

CAUTION:

ITS communication uses the twisted pair line. Be careful when repairing the wiring.

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:000000003902586

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If accelerator pedal actuator is not transmitting or receiving ITS communication signal for 2 seconds or more.	ITS communication system

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000003902587

1.PERFORM THE SELF-DIAGNOSIS

- Turn ignition switch ON.
- Turn the DCA switch ON, and wait for 2 seconds or more.
- Perform "All DTC Reading" with CONSULT-III.
- Check if the "U1000" is detected as the current malfunction in self-diagnosis results of "ACCELE PEDAL ACT".

Is "U1000" detected as the current malfunction?

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< DTC/CIRCUIT DIAGNOSIS >

- YES >> Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

ACCELERATOR PEDAL ACTUATOR : Special Repair Requirement

INFOID:000000003902588

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

Check the operation after performing the accelerator pedal released position learning when the following operation is performed.

- Disconnection and connection of accelerator pedal position sensor connector
- Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1. CHECK CONTROL UNIT REPLACED, REMOVED AND/OR INSTALLED

Perform the adjustment work after the replacement or removal and installation of ICC sensor integrated unit, replacement of accelerator pedal assembly, or disconnection or connection of accelerator pedal position sensor connector.

Which is replaced, removed or installed?

- ICC sensor integrated unit >> GO TO 2.
Accelerator pedal assembly >> GO TO 3.

2. LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 4.

3. ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the Accelerator Pedal Released Position Learning. Refer to [EC-25, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 4.

4. CHECK DCA SYSTEM

1. Erase the self-diagnosis results, and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U1010 CONTROL UNIT (CAN) ICC SENSOR INTEGRATED UNIT

ICC SENSOR INTEGRATED UNIT : Description

INFOID:000000003902589

CAN controller controls the communication of CAN communication signal and the error detection.

ICC SENSOR INTEGRATED UNIT : DTC Logic

INFOID:000000003902590

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010 (110)	CONTROL UNIT (CAN)	If ICC sensor integrated unit detects malfunction by CAN controller initial diagnosis	ICC sensor integrated unit

ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure

INFOID:000000003902591

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the DCA switch ON.
2. Perform "All DTC Reading" with CONSULT-III.
3. Check if the "U1010" is detected as the current malfunction in self-diagnosis results of "ICC".

Is "U1010" detected as the current malfunction?

- YES >> Replace the ICC sensor integrated unit.
NO >> INSPECTION END

ICC SENSOR INTEGRATED UNIT : Special Repair Requirement

INFOID:000000003902592

DESCRIPTION

Perform the action test after adjusting the laser beam aiming of ICC sensor integrated unit when the following operation is performed.

- Removal and installation of ICC sensor integrated unit
- Replacement of ICC sensor integrated unit

SPECIAL REPAIR REQUIREMENT

1.LASER BEAM AIMING ADJUSTMENT OF ICC SENSOR INTEGRATED UNIT

Adjust the laser beam aiming of the ICC sensor integrated unit. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2.CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : Description

INFOID:000000003902593

CAN controller controls the communication of ITS communication signal and the error detection.

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:000000003902594

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010	CONTROL UNIT (CAN)	If accelerator pedal actuator detects malfunction by CAN controller initial diagnosis.	Accelerator pedal actuator

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000003902595

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the DCA switch ON.
2. Perform "All DTC Reading" with CONSULT-III.
3. Check if the DTC "U1010" is detected as the current malfunction in self-diagnosis results of "ACCELERATOR PEDAL ACT".

Is "U1010" detected as the current malfunction?

- YES >> Replace the accelerator pedal assembly.
NO >> INSPECTION END

ACCELERATOR PEDAL ACTUATOR : Special Repair Requirement

INFOID:000000003902596

DESCRIPTION

The accelerator pedal released position learning is necessary when the following operation is performed.

- Disconnection and connection of accelerator pedal assembly connector
- Replace accelerator pedal assembly

SPECIAL REPAIR REQUIREMENT

1. ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform the accelerator pedal released position learning. Refer to [EC-25. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VQ35HR) or [EC-582. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description"](#) (VK50VE).

>> GO TO 2.

2. CHECK DCA SYSTEM

1. Erase the "self-diagnosis results", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> WORK END

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

POWER SUPPLY AND GROUND CIRCUIT

ICC SENSOR INTEGRATED UNIT

ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure

INFOID:000000003902597

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	45

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

2.CHECK ICC SENSOR INTEGRATED UNIT POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between ICC sensor integrated unit harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
ICC sensor integrated unit		Ground Battery voltage
Connector	Terminal	
E67	1	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit power supply circuit.

3.CHECK ICC SENSOR INTEGRATED UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ICC sensor integrated unit connector.
3. Check for continuity between ICC sensor integrated unit harness connector and ground.

ICC sensor integrated unit		Ground	Continuity
Connector	Terminal		
E67	4		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ICC sensor integrated unit ground circuit.

BRAKE BOOSTER CONTROL UNIT

BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure

INFOID:000000003902598

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Battery power supply	33
Ignition power supply	45

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

POWER SUPPLY AND GROUND CIRCUIT

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

2.CHECK BRAKE BOOSTER CONTROL UNIT POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between brake booster control unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
Brake booster control unit		Ignition switch	Battery volt- age
Connector	Terminal		
B250	1	OFF	
	2		
B249	33	ON	
	42		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the brake booster control unit power supply circuit.

3.CHECK BRAKE BOOSTER CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect brake booster control unit connector.
3. Check for continuity between brake booster control unit harness connector and ground.

Brake booster control unit		Ground	Continuity
Connector	Terminal		
B250	19		Existed
	20		
B249	46		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the brake booster control unit ground circuit.

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000003902599

1.CHECK FUSES

Check if any of the following fuses are blown:

Power supply	Fuse No.
Battery power supply	61
Ignition power supply	45

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

2.CHECK ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the accelerator pedal actuator connector.
3. Check voltage between accelerator pedal actuator harness connector and ground.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

Terminals		Condition	Voltage
(+)	(-)		
Accelerator pedal actuator		Ignition switch	Battery voltage
Connector	Terminal		
E115	2	OFF	
	1	ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the accelerator pedal actuator power supply circuit.

3. CHECK ACCELERATOR PEDAL ACTUATOR GROUND CIRCUIT

Check for continuity between accelerator pedal actuator harness connector and ground.

Accelerator pedal actuator		Ground	Continuity
Connector	Terminal		
E115	4		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the accelerator pedal actuator ground circuit.

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ICC WARNING CHIME CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

ICC WARNING CHIME CIRCUIT

Description

INFOID:000000003902603

- The ICC sensor integrated unit transmits the buzzer output signal to the brake booster control unit via ITS communication.
- The brake booster control unit outputs the buzzer output signal to the ICC warning chime.
- A warning chime sounds when the system is canceled or when the vehicle distance from the vehicle ahead is too close.

Component Function Check

INFOID:000000003902604

1. ICC WARNING CHIME OPERATION INSPECTION

1. Select the active test item "ICC BUZZER" of "ICC" with CONSULT-III.
2. Check if the ICC warning chime sounds when operating each test item.

Does the ICC warning chime sound?

- YES >> The ICC warning chime circuit is normal.
NO >> Refer to [CCS-314. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003902605

1. CHECK ICC WARNING CHIME POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the ICC warning chime connector.
3. Turn ignition switch ON.
4. Check voltage between ICC warning chime harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
ICC warning chime		Ground
Connector	Terminal	
M17	1	
		Battery voltage

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2. CHECK ICC WARNING CHIME SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect brake booster control unit connector.
3. Check for continuity between the ICC warning chime harness connector and brake booster control unit harness connector.

ICC warning chime		Brake booster control unit		Continuity
Connector	Terminal	Connector	Terminal	
M17	3	B250	21	Existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3. CHECK ICC WARNING CHIME SIGNAL CIRCUIT SHORT

Check for continuity between ICC warning chime harness connector and ground.

ICC WARNING CHIME CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

ICC warning chime		Ground	Continuity
Connector	Terminal		
M17	3		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4.CHECK ICC WARNING CHIME

Check the ICC warning chime. Refer to [CCS-315, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the brake booster control unit.

NO >> Replace the ICC warning chime.

Component Inspection

INFOID:000000003902606

1.ICC WARNING CHIME INSPECTION

Apply the battery voltage between ICC warning chime terminals, and then check if the ICC warning chime sounds.

Terminal		Condition	Warning chime
(+)	(-)		
1	3	When the battery voltage is applied	Sounds
		When the battery voltage is not applied	Does not sound

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the ICC warning chime.

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ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

ECU DIAGNOSIS INFORMATION

ICC SENSOR INTEGRATED UNIT

Reference Value

INFOID:000000003902607

VALUES ON THE DIAGNOSIS TOOL

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and operate the ICC system.	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	<ul style="list-style-type: none"> • Start the engine and turn the ICC system ON. • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting. 	When set to "long"	Long
		When set to "middle"	Mid
		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch.	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Start the engine and press MAIN switch.	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press the MAIN switch.	When ICC system is malfunctioning (ICC system warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Monitor item	Condition		Value/Status
BA WARNING	Engine running	IBA OFF indicator lamp ON • When IBA system is malfunctioning • When IBA system is turned to OFF	On
		IBA OFF indicator lamp OFF • When IBA system is normal • When IBA system is turned to ON	Off
VHCL SPEED SE	While driving		Value of vehicle speed signal (wheel speed)
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed.
BUZZER O/P	Engine running	When the buzzer output signal is output	On
		When the buzzer output signal is not output	Off
THRTL SENSOR	NOTE: The item is indicated, but not monitored		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating	Off
		Wiper LO operation	Low
		Wiper HI operation	High
YAW RATE	NOTE: The item is indicated, but not monitored		0.0
RELEASE SW NO	Engine running	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
RELEASE SW NC	Engine running	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When ICC brake hold relay is activated	On
		When the ICC brake hold relay is not activated	Off
PRESS SENS	Engine running	When brake pedal is not depressed	0.0
		When brake pedal is depressed	Brake fluid pressure value
D RANGE SW	Engine running	When the selector lever is in "D", "DS" position or manual mode	On
		When the selector lever is in any position other than "D", "DS" or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in "N", "P" position	On
		When the selector lever is in any position other than "N", "P"	Off
PWR SUP MONI	Engine running		Power supply voltage value of ICC sensor integrated unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position.
GEAR	While driving		Displays the shift position.

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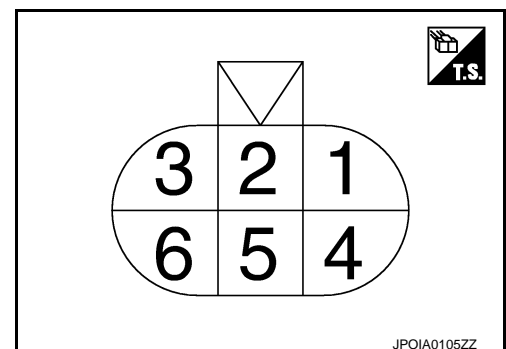
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Monitor item	Condition		Value/Status
CLUTCH SW SIG	NOTE: The item is indicated, but not monitored		Off
NP SW SIG	NOTE: The item is indicated, but not used		—
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated	Off
		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
SET DISP IND	<ul style="list-style-type: none"> Start the engine and activate the conventional (fixed speed) cruise control mode. Press SET/COAST switch 	SET switch indicator lamp ON	On
		SET switch indicator lamp OFF	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected	Displays the distance from the preceding vehicle.
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected	Displays the relative speed.
		When a vehicle ahead is not detected	0.0
DCA ON SW	Ignition switch ON	When the DCA switch is not pressed	Off
		When the DCA switch is pressed	On
DCA ON IND	Start the engine	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA PWR	Ignition switch ON		Power supply voltage
IBA SW	Ignition switch ON	When the IBA OFF switch is not pressed	Off
		When the IBA OFF switch is pressed	On

TERMINAL LAYOUT



ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
2 (L)		ITS communication-H	Input/ Output	—	—
3 (G)		CAN-H	Input/ Output	—	—
4 (B)		Ground	—	Ignition switch ON	0 V
5 (P)		ITS communication-L	Input/ Output	—	—
6 (BR)		CAN-L	Input/ Output	—	—

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ICC SENSOR INTEGRATED UNIT

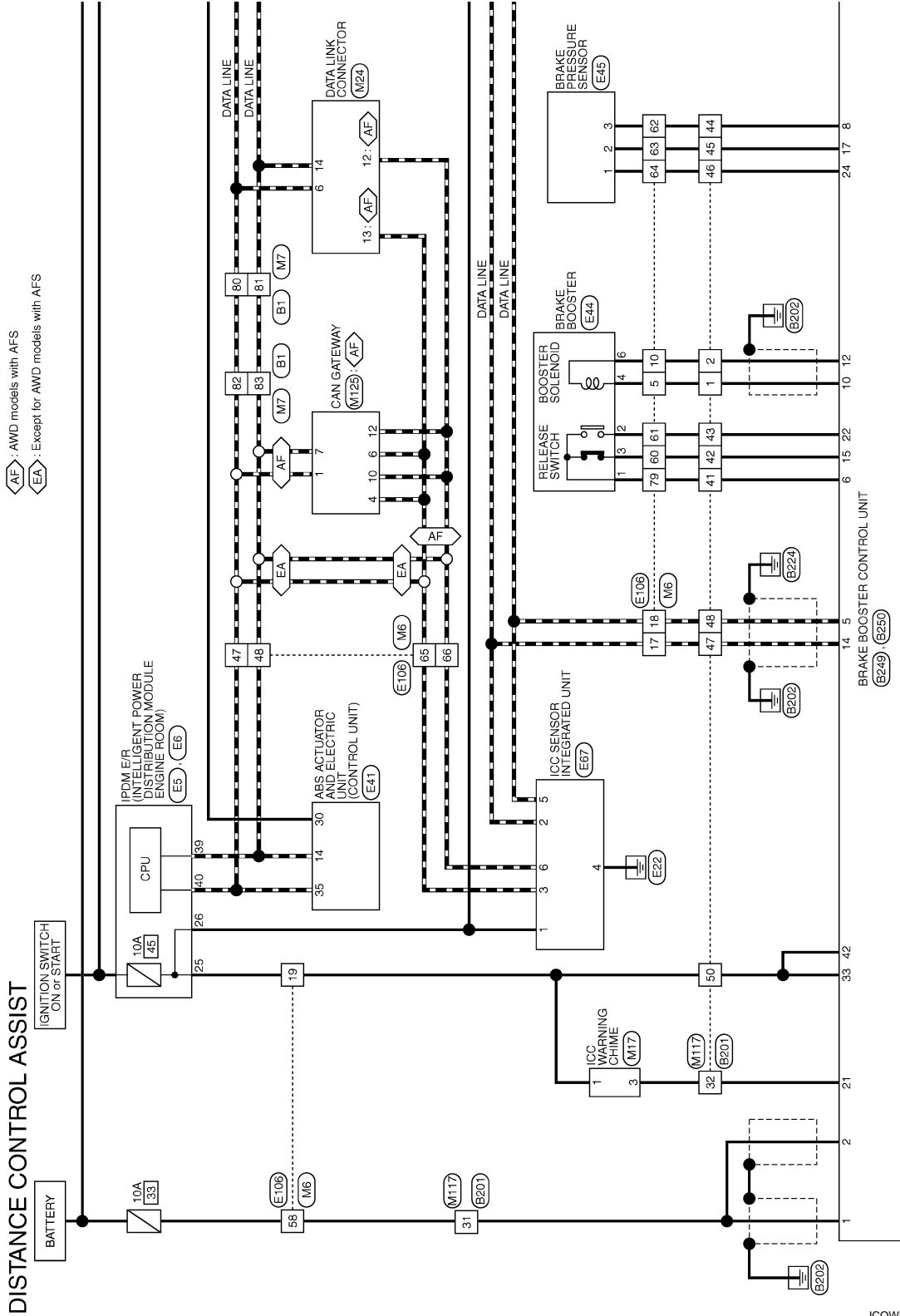
< ECU DIAGNOSIS INFORMATION >

[DCA]

Wiring Diagram - DISTANCE CONTROL ASSIST -

INFOID:000000003902608

◊ AF : AWD models with AFS
 ◊ EA : Except for AWD models with AFS



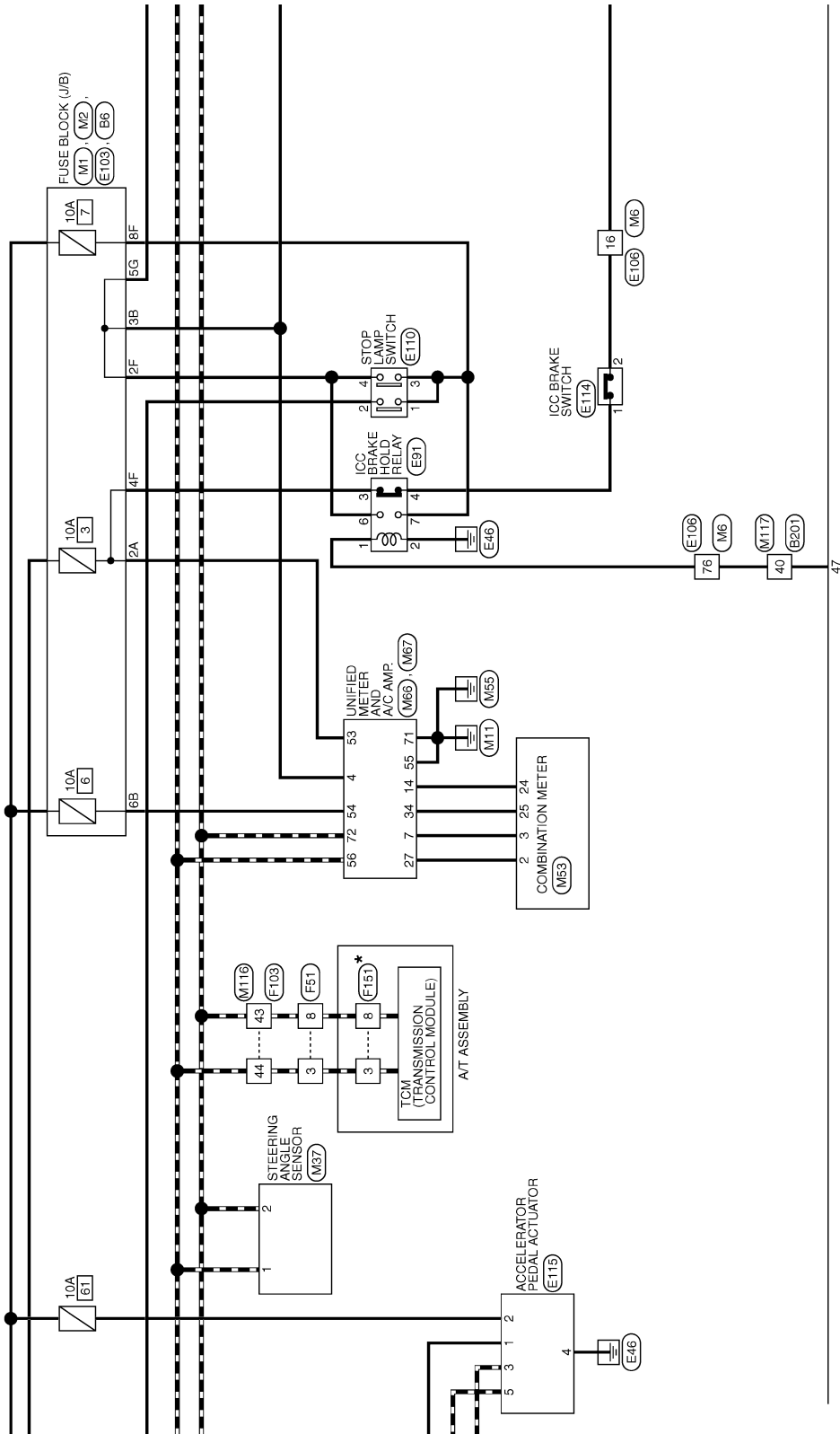
2008/03/04

JCOWM0052GB

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]



BRAKE BOOSTER CONTROL UNIT
(E249) (E250)

*: This connector is not shown in "Harness Layout".

JCOWM0053GB

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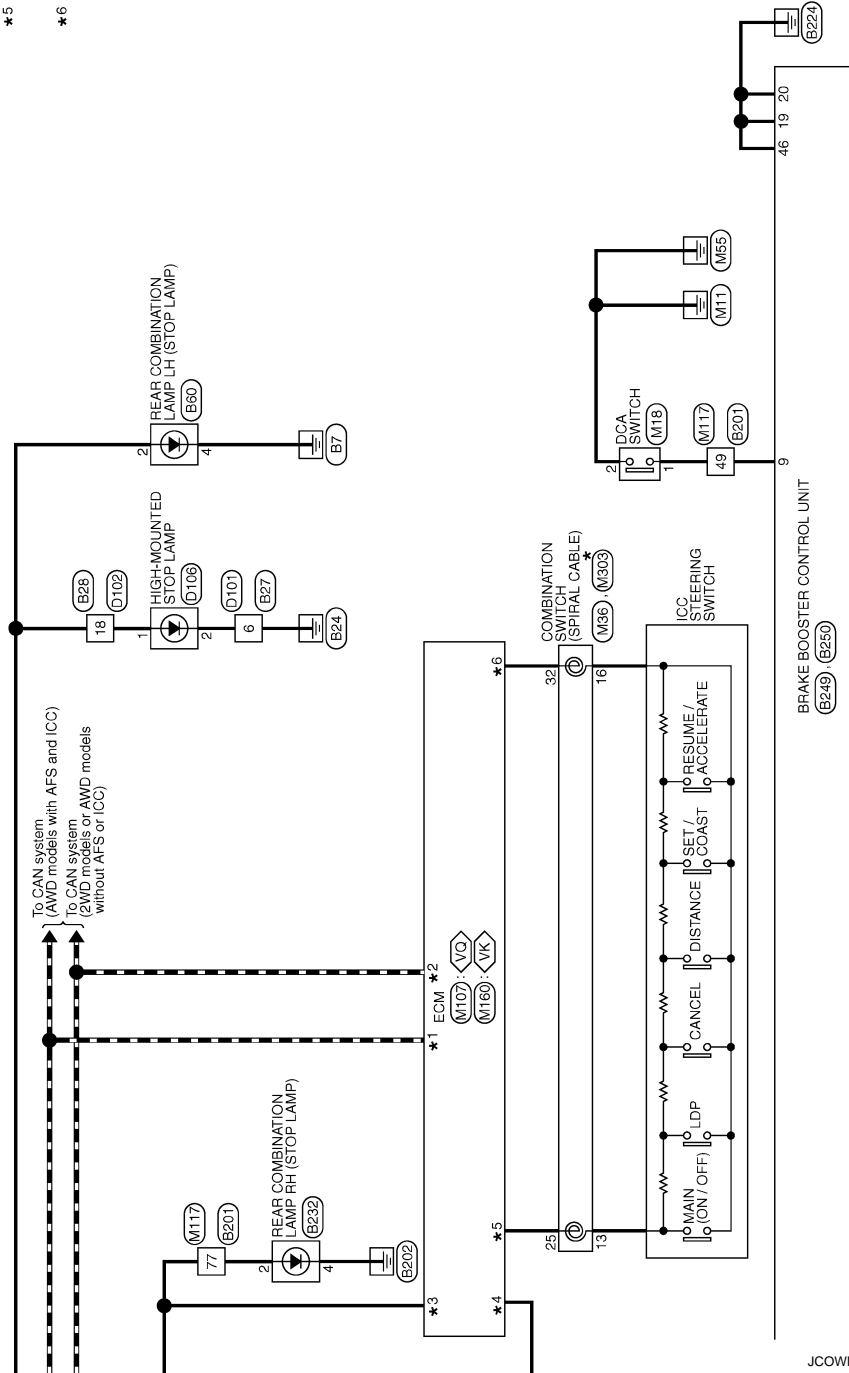
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

- *1 114: <VQ>
105: <VK>
- *2 113: <VQ>
101: <VK>
- *3 122: <VQ>
110: <VK>
- *4 126: <VQ>
117: <VK>
- *5 101: <VQ>
102: <VK>
- *6 108: <VQ>
111: <VK>

<VQ> : With VQ engine
<VK> : With VK engine



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*: This connector is not shown in "Harness Layout".


ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]


DISTANCE CONTROL ASSIST

Connector No.	B28
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH




Terminal No.	18	Color of Wire	LG	Signal Name [Specification]
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Connector No.	B27
Connector Name	WIRE TO WIRE
Connector Type	M08MH-LC




Terminal No.	6	Color of Wire	GR	Signal Name [Specification]
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Connector No.	B6
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS17PER-CS



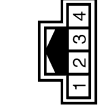
Terminal No.	5	Color of Wire	LG	Signal Name [Specification]
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Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	80	Color of Wire	L	Signal Name [Specification]
Terminal No.	81	Color of Wire	P	Signal Name [Specification]
Terminal No.	82	Color of Wire	L	Signal Name [Specification]
Terminal No.	83	Color of Wire	P	Signal Name [Specification]


Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	TH04MW-NH



Terminal No.	4	Color of Wire	B	Signal Name [Specification]
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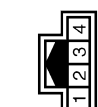
Terminal No.	47	Color of Wire	L	Signal Name [Specification]
Terminal No.	48	Color of Wire	P	Signal Name [Specification]
Terminal No.	49	Color of Wire	Y	Signal Name [Specification]
Terminal No.	50	Color of Wire	G	Signal Name [Specification]
Terminal No.	77	Color of Wire	LG	Signal Name [Specification]

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	1	Color of Wire	G	Signal Name [Specification]
Terminal No.	2	Color of Wire	R	Signal Name [Specification]
Terminal No.	31	Color of Wire	W	Signal Name [Specification]
Terminal No.	32	Color of Wire	GR	Signal Name [Specification]
Terminal No.	40	Color of Wire	LG	Signal Name [Specification]
Terminal No.	41	Color of Wire	SB	Signal Name [Specification]
Terminal No.	42	Color of Wire	V	Signal Name [Specification]
Terminal No.	43	Color of Wire	BR	Signal Name [Specification]
Terminal No.	44	Color of Wire	R	Signal Name [Specification]
Terminal No.	45	Color of Wire	G	Signal Name [Specification]
Terminal No.	46	Color of Wire	O	Signal Name [Specification]

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	TH04MW-NH



Terminal No.	2	Color of Wire	LG	Signal Name [Specification]
Terminal No.	4	Color of Wire	B	Signal Name [Specification]

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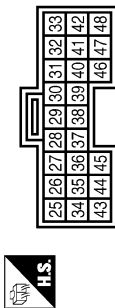
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

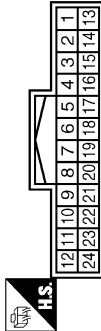
DISTANCE CONTROL ASSIST

Connector No.	B249
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FY



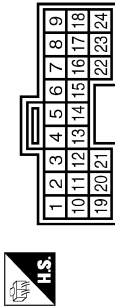
Terminal No.	Color of Wire	Signal Name [Specification]
33	G	IGNITION
42	G	IGNITION
46	B	GND
47	LG	BRAKE HOLD RLY DRIVE SIGNAL

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH24FV-NH



Terminal No.	Color of Wire	Signal Name [Specification]
18	LG	-

Connector No.	B250
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BATTERY
2	W	BATTERY
5	P	ITS COMM-L
6	SR	RELEASE SW PWR
8	R	BRAKE PRESSURE SEN PWR
9	Y	DCA SW
10	G	BOOSTER SOL PWR
12	R	BOOSTER SOL GND
14	L	ITS COMM-H
15	V	RELEASE SW (NO)
17	G	BRAKE PRESSURE SEN SIGNAL

Connector No.	D106
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	TB02MW



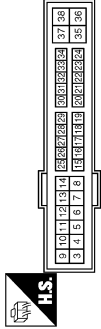
Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	-
2	B	-

19	B	GND
20	B	GND
21	GR	CHIME SIGNAL
22	BR	RELEASE SW (NO)
24	O	BRAKE PRESSURE SEN GND



Terminal No.	Color of Wire	Signal Name [Specification]
6	GR	-

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-GS12-M4-IV



Terminal No.	Color of Wire	Signal Name [Specification]
23	G	-
26	R	-

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	-
40	L	-

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

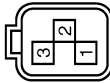
DISTANCE CONTROL ASSIST

Connector No.	E67
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	RS08FB-PR



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	IGNITION
2	L	ITS COMM-H
3	G	CAN-H
4	B	GND
5	P	ITS COMM-L
6	BR	CAN-L

Connector No.	E45
Connector Name	BRAKE PRESSURE SENSOR
Connector Type	AAJ20FBZ



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	-
2	L	-
3	LG	-

Connector No.	E44
Connector Name	BRAKE BOOSTER
Connector Type	RV08FGY



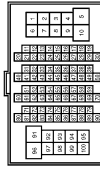
Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	V	-
4	Y	-
6	BR	-

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC CONTROL UNIT
Connector Type	BAK42PE-AHZ4-LH



Terminal No.	Color of Wire	Signal Name [Specification]
14	P	CAN-L
30	SB	BLS
35	L	CAN-H

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	THR0JFW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
62	LG	-
63	L	-
64	O	-
65	G	-
66	BR	-
76	L	-
79	SB	-

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Connector No.	E81
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	M08FGY-R-US



Terminal No.	Color of Wire	Signal Name [Specification]
2F	W	-
4F	G	-
8F	L	-

Terminal No.	Color of Wire	Signal Name [Specification]
5	Y	-
10	BR	-
16	SB	-
17	L	-
18	P	-
19	G	-
47	L	-
48	P	-
58	O	-
60	V	-
61	P	-

Terminal No.	Color of Wire	Signal Name [Specification]
2F	W	-
4F	G	-
8F	L	-

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	G	-
4	G	-
6	W	-
7	L	-

JCOWM0057GB

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ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

DISTANCE CONTROL ASSIST

Connector No.	E110
Connector Name	STOP LAMP SWITCH
Connector Type	MO4FW-LC



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	SB	-
3	L	-
4	W	-

Connector No.	E114
Connector Name	ICC BRAKE SWITCH (WITH ICC)
Connector Type	M02FBR-LC



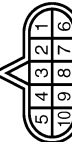
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
2	SB	-

Connector No.	E115
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	KD206FB



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	IGNITION
2	O	BATTERY
3	P	ITS COMM-L
4	B	GND
5	L	ITS COMM-H

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG-DGY



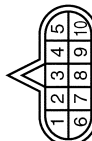
Terminal No.	Color of Wire	Signal Name [Specification]
3	L	-
8	P	-

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK35FW-NS10



Terminal No.	Color of Wire	Signal Name [Specification]
43	P	-
44	L	-

Connector No.	F151
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SPT0FG



Terminal No.	Color of Wire	Signal Name [Specification]
3	R	CAN-H
8	BR	CAN-L

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
2A	G	-

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
3B	P	-
8B	Y	-

JCOWM0058GB

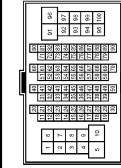
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

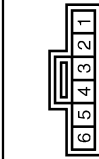
DISTANCE CONTROL ASSIST

Connector No.	M16
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS1F-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
5	R	-
10	BR	-
16	BR	-
17	L	-
18	P	-
19	G	-
47	L	-
48	P	-
58	O	-
60	W	-
61	P	-

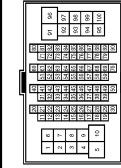
Connector No.	M1B
Connector Name	DCA SWITCH
Connector Type	TK08FGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	-
2	G	-

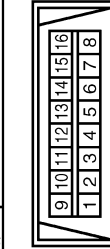
62	R	-
63	L	-
64	O	-
65	L	-
66	P	-
76	V	-
79	SB	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS1F-TM4



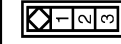
Terminal No.	Color of Wire	Signal Name [Specification]
80	L	-
81	P	-
82	L	-
83	P	-

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD18FW



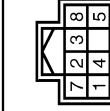
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
12	P	-
13	L	-
14	P	-

Connector No.	M17
Connector Name	ICC WARNING CHIME
Connector Type	AG8FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
3	W	-

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L

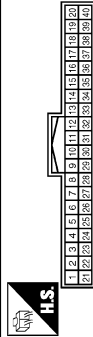
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ICC SENSOR INTEGRATED UNIT

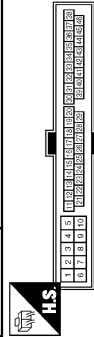
DISTANCE CONTROL ASSIST

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH407V-NH



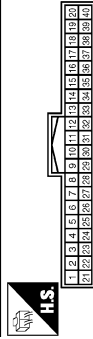
Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	COMM (METER->AMP.)
2	GR	COMM (AMP->METER)
3	BR	COMM (LCD->AMP.)
24	Y	COMM (AMP->LCD)
25	Y	COMM (AMP->LCD)

Connector No.	M16
Connector Name	WIRE TO WIRE
Connector Type	TK36WV-NS10



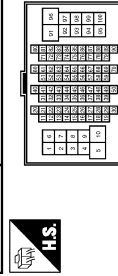
Terminal No.	Color of Wire	Signal Name [Specification]
43	P	-
44	L	-

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH407V-NH



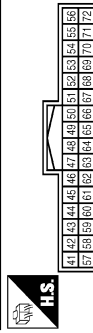
Terminal No.	Color of Wire	Signal Name [Specification]
4	P	STOP LAMP SW
7	GR	COMM (AMP->METER)
14	BR	COMM (LCD->AMP.)
27	LG	COMM (METER->AMP.)
34	Y	COMM (AMP->LCD)

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80MV-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	BR	-
31	W	-
32	W	-
40	V	-
41	SB	- [With ICC]
42	W	-
43	P	- [With ICC]
44	R	-
45	L	- [With ICC]
46	O	- [With ICC]

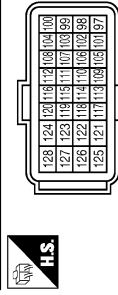
Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH127V-NH



Terminal No.	Color of Wire	Signal Name [Specification]
53	G	IGN
54	Y	BAT
55	B	GND
56	L	CAN-H
71	B	GND
72	P	CAN-L

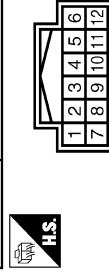
Terminal No.	47	L	- [With ICC]
48	P	-	[With ICC]
49	O	-	[With ICC]
50	G	-	[With ICC]
77	LG	-	

Connector No.	M107
Connector Name	ECM (WITH VQ ENGINE)
Connector Type	FR24FGY-R25P-R-LH-Z



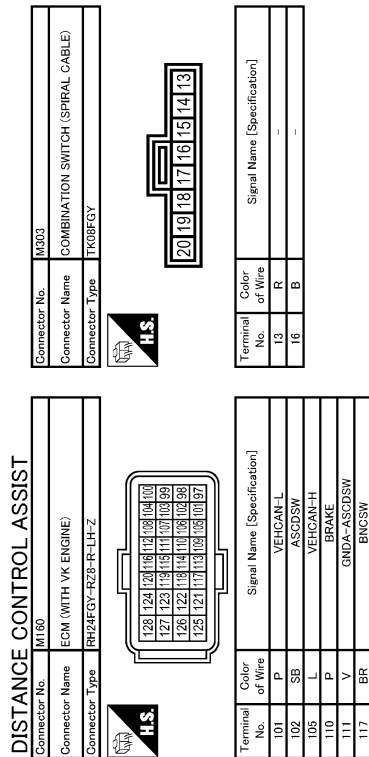
Terminal No.	Color of Wire	Signal Name [Specification]
101	SB	ASD5SW
108	V	GMDA ASSD
113	P	VEHCAN-L1
114	L	VEHCAN-H1
122	P	BRAKE
126	BR	BNC SW

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
4	L	CAN-H
6	L	CAN-H
7	P	CAN-L
10	P	CAN-L
12	P	CAN-L

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JCOWM0061GB

Fail-Safe

INFOID:000000003902609

If a malfunction occurs in the system, a chime sounds a beep, and ICC sensor integrated unit cancels the control. Then the ICC system warning lamp in the combination meter illuminates.

DTC Inspection Priority Chart

INFOID:000000003902610

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • C1A31: BCU INTERNAL MALF • C1F02: APA C/U MALF
3	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A08: PRESS SEN CIRCUIT • C1A09: BOOSTER SOL/V CIRC • C1A10: RELEASE SW CIRC • C1A11: PRESSURE CONTROL • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A21: UNIT HIGH TEMP • C1A22: BCU CIRCUIT • C1A24: NP RANGE • C1A28: BCU PWR SUPPLY CIR • C1A29: BCU PWR SUPPLY CIR2 • C1A30: BCU CAN COMM CIRC • C1A32: IBA FLAG STUCK • C1A33: CAN TRANSMISSION ERROR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR2 • C1A38: APA CAN CIR1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR • U0121: VDC CAN CIR2 • U0126: STRG SEN CAN CIR1 • U0129: BCU CAN CIR2 • U0401: ECM CAN CIR1 • U0402: TCM CAN CIR1 • U0415: VDC CAN CIR1 • U0418: BCU CAN CIR1 • U0428: STRG SEN CAN CIR2
4	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIRC
5	<ul style="list-style-type: none"> • C1A15: GEAR POSITION
6	<ul style="list-style-type: none"> • C1A00: CONTROL UNIT

DTC Index

INFOID:000000003902611

NOTE:

- The details of time display are as per the following.
 - CRNT: A malfunction is detected now
 - PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
 - 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
 - 1 - 39: It increases from 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
 - If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)

ICC SENSOR INTEGRATED UNIT

[DCA]

< ECU DIAGNOSIS INFORMATION >

- 1 - 49: It increases from 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

NOTE:

IBA system automatically returns to ON, when erasing self diagnosis result.

x: Applicable

DTC		CONSULT-III display	ICC system warning lamp	Fail-safe function	Reference
CONSULT-III	On board display			DCA system	
C1A00	0	CONTROL UNIT	×	×	CCS-206
C1A01	1	POWER SUPPLY CIR	×	×	CCS-208
C1A02	2	POWER SUPPLY CIR 2	×	×	CCS-208
C1A03	3	VHCL SPEED SE CIRC	×	×	CCS-210
C1A04	4	ABS/TCS/VDC CIRCUIT	×	×	CCS-212
C1A05	5	BRAKE SW/STOP L SW	×	×	CCS-214
C1A06	6	OPERATION SW CIRC	×	×	CCS-65
C1A08	8	PRESS SEN CIRCUIT	×	×	CCS-219
C1A09	9	BOOSTER SOL/V CIRC	×	×	CCS-221
C1A10	10	RELEASE SW CIRC	×	×	CCS-224
C1A11	11	PRESSURE CONTROL	×	×	CCS-227
C1A12	12	LASER BEAM OFFCNTR	×	×	CCS-230
C1A13	13	STOP LAMP RLY FIX	×	×	CCS-231
C1A14	14	ECM CIRCUIT	×	×	CCS-238
C1A15	15	GEAR POSITION	×	×	CCS-240
C1A16	16	RADAR STAIN	×	×	CCS-243
C1A18	18	LASER AIMING INCOMP	×	×	CCS-245
C1A21	21	UNIT HIGH TEMP	×	×	CCS-247
C1A22	22	BCU CIRCUIT	×	×	CCS-249
C1A24	24	NP RANGE	×	×	CCS-253
C1A28	28	BCU PWR SUPPLY CIR	×	×	CCS-255
C1A29	29	BCU PWR SUPPLY CIR2	×	×	CCS-255
C1A30	30	BCU CAN COMM CIRC	×	×	CCS-257
C1A31	31	BCU INTERNAL MALF	×	×	CCS-258
C1A32	32	IBA FLAG STUCK	×	×	CCS-260
C1A33	33	CAN TRANSMISSION ERROR	×	×	CCS-262
C1A34	34	COMMAND ERROR	×	×	CCS-264
C1A35	35	APA CIR	×	×	CCS-266
C1A36	36	APA CAN COMM CIR	×	×	CCS-267
C1A37	133	APA CAN CIR2	×	×	CCS-269
C1A38	132	APA CAN CIR1	×	×	CCS-271
C1A39	39	STRG SEN CIR	×	×	CCS-273
C1A40	40	SYSTEM SW CIRC	×	×	CCS-275
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—	—

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CCS

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

DTC		CONSULT-III display	ICC system warning lamp	Fail-safe function	Reference
CONSULT-III	On board display			DCA system	
C1F01	91	APA MOTOR MALF	×	×	CCS-279
C1F02	92	APA C/U MALF	×	×	CCS-281
C1F05	95	APA PWR SUPPLY CIR	×	×	CCS-284
U0121	127	VDC CAN CIR2	×	×	CCS-290
U0126	130	STRG SEN CAN CIR1	×	×	CCS-292
U0129	125	BCU CAN CIR2	×	×	CCS-294
U0401	120	ECM CAN CIR1	×	×	CCS-296
U0402	122	TCM CAN CIR1	×	×	CCS-298
U0415	126	VDC CAN CIR1	×	×	CCS-300
U0418	124	BCU CAN CIR1	×	×	CCS-302
U0428	131	STRG SEN CAN CIR2	×	×	CCS-304
U1000	100	CAN COMM CIRCUIT	×	×	CCS-306
U1010	110	CONTROL UNIT (CAN)	×	×	CCS-309

BRAKE BOOSTER CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

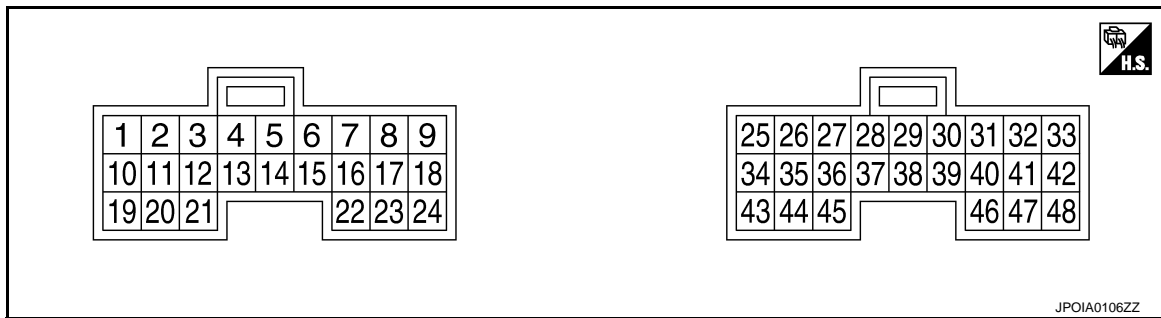
[DCA]

BRAKE BOOSTER CONTROL UNIT

Reference Value

INFOID:000000003902612

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (W)	Ground	Battery power supply	—	Ignition switch OFF	—	Battery voltage
2 (W)		Battery power supply	—	Ignition switch OFF	—	Battery voltage
5 (P)		ITS communication-L	Input/ Output	—	—	—
6 (SB)		Release switch power supply	—	Ignition switch ON	—	10 V
8 (R)	24 (O)	Brake pressure sensor power supply	—	Ignition switch ON	—	5 V
9 (Y)	Ground	DCA switch	Input	Ignition switch ON	DCA switch pressed	0 V
10 (G)		Booster solenoid pow- er supply	—	Ignition switch ON	DCA switch not pressed	12 V
					—	—
12 (R)	Booster solenoid ground	Output	Ignition switch ON	At "BOOSTER SOL/V " test of "Active test"		
14 (L)	ITS communication-H	Input/ Output	—	—	—	
15 (V)	Ground	Release switch (nor- mal close)	—	Ignition switch ON	Press the brake pedal.	0 V
					Brake pedal not depressed	10 V
17 (G)	24 (O)	Brake pressure sensor signal	Input	Ignition switch ON	Brake pedal not depressed	0.5 V
					Press the brake pedal.	0.5 - 3.5 V Note: The harder the brake is pressed, the higher the voltage.

BRAKE BOOSTER CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Terminal No. (Wire color)		Description		Condition		Value (Approx.)	
+	-	Signal name	Input/ Output				
19 (B)	Ground	Ground	—	Ignition switch ON	—	0 V	
20 (B)		Ground	—	Ignition switch ON	—	0 V	
21 (GR)		ICC warning chime signal	Output	Ignition switch ON	ICC warning chime not operating	—	12 V
					ICC warning chime operation	—	0 V
22 (BR)		Release switch (normal open)	Input	Ignition switch ON	Brake pedal depressed	—	10 V
					Brake pedal not depressed	—	0 V
24 (O)		Brake pressure sensor ground	—	—	—	—	—
33 (G)		Ignition power supply	—	Ignition switch ON	—	—	Battery voltage
40 (SB)		IBA OFF switch	Input	Ignition switch ON	IBA OFF switch pressed	—	0 V
					IBA OFF switch not pressed	—	12 V
42 (G)		Ignition power supply	—	Ignition switch ON	—	—	Battery voltage
46 (B)		Ground	—	Ignition switch ON	—	—	0 V
47 (LG)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	—	0 V
	At "STOP LAMP" test of "Active test"				—	12 V	

ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

ACCELERATOR PEDAL ACTUATOR

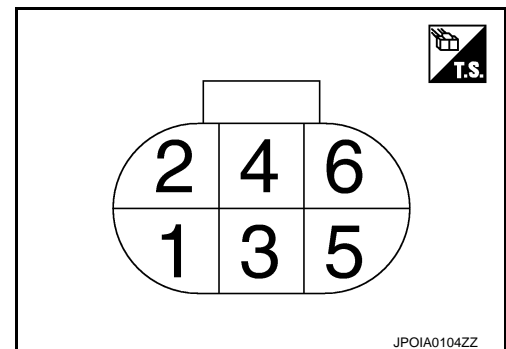
Reference Value

INFOID:000000003902613

VALUES ON THE DIAGNOSIS TOOL

Monitor item	Condition		Value/Status
TGT FBK FRC	Drive the vehicle and operate the DCA system	When the ICC sensor integrated unit is controlling the accelerator pedal actuator	It changes with the demand from the ICC sensor integrated unit.
TGT MOT POSI	NOTE: The item is indicated, but not used.		—
ACT MOT POSI	Engine running	Depress accelerator pedal	It changes according to the depressed amount of accelerator pedal
AP OPEN	Engine running	Depress accelerator pedal	It changes according to the depressed amount of accelerator pedal
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA CURRENT	Drive the vehicle and operate the DCA system	When the ICC sensor integrated unit is controlling the accelerator pedal actuator	Display the accelerator pedal actuator motor operation consumption current
APA PWR	Ignition switch ON		Battery voltage
APA OPE STATS	Engine running	When the accelerator pedal actuator control is permitted	On
		When the accelerator pedal actuator control is invalid	Off
APA STATS	Engine running	When the accelerator pedal actuator is normal	Ready
		When the accelerator pedal actuator is temporarily malfunctioning	TP NG
		When the accelerator pedal actuator is malfunctioning	NG
		During the accelerator pedal actuator operation preparations	Init

TERMINAL LAYOUT



PHYSICAL VALUES

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ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
2 (O)		Battery power supply	Input	Ignition switch OFF	Battery voltage
3 (P)		ITS communication-L	Input/ Output	—	—
4 (B)		Ground	—	Ignition switch ON	0 V
5 (L)		ITS communication-H	Input/ Output	—	—

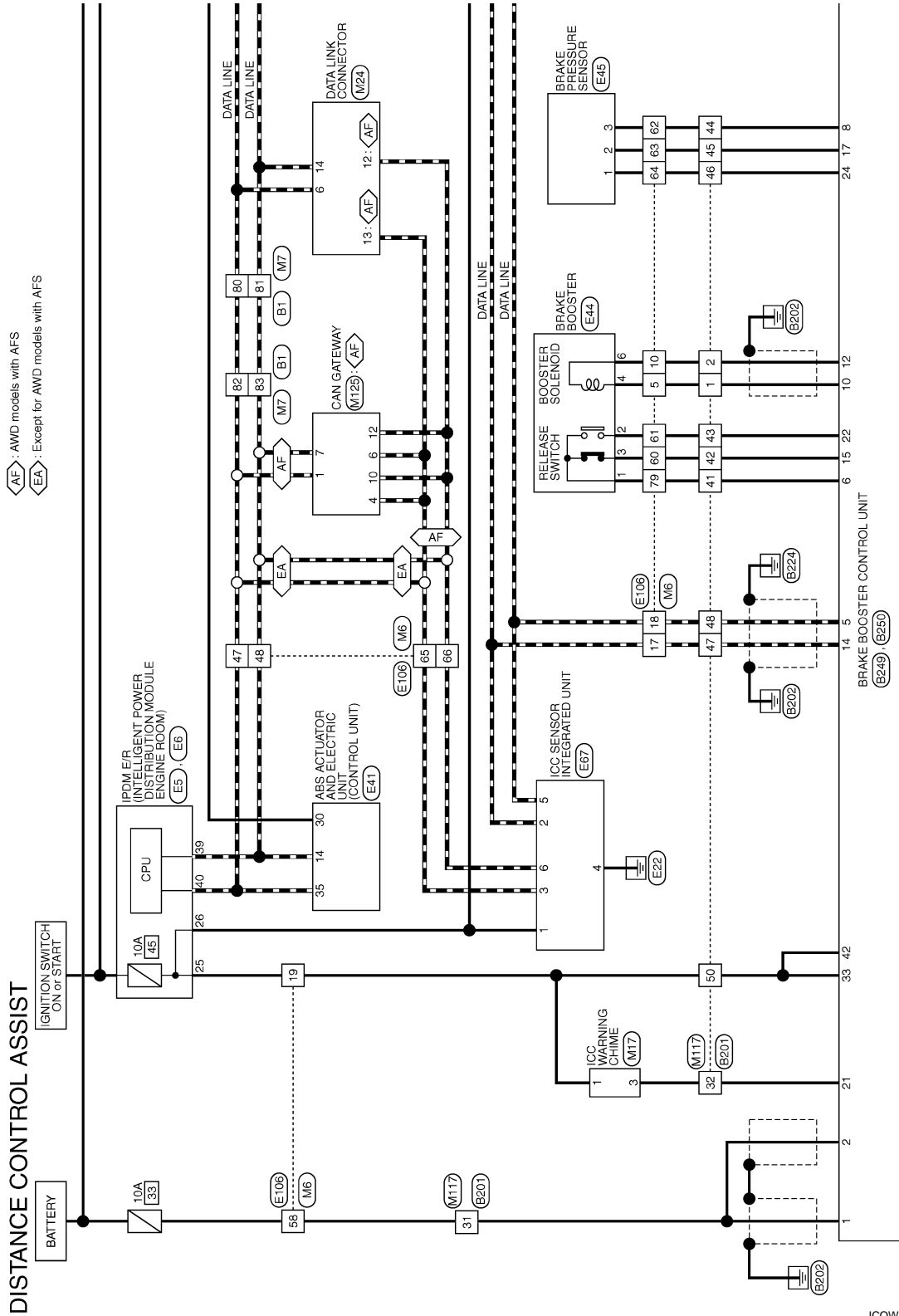
ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

Wiring Diagram - DISTANCE CONTROL ASSIST -

INFOID:000000003902614



2008/03/04

JCOWM0052GB

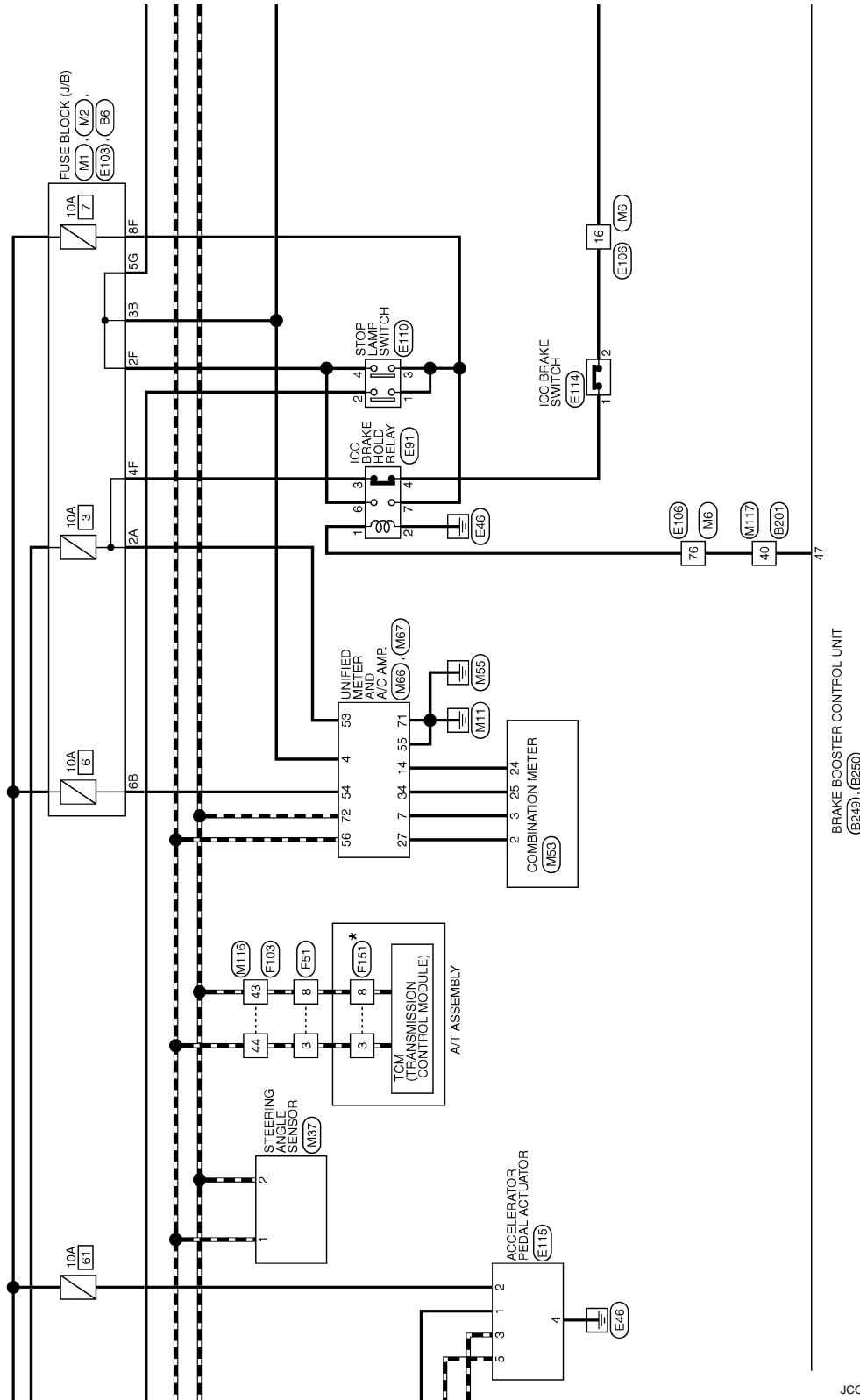
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ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]



*: This connector is not shown in "Harness Layout".

JCOWM0053GB

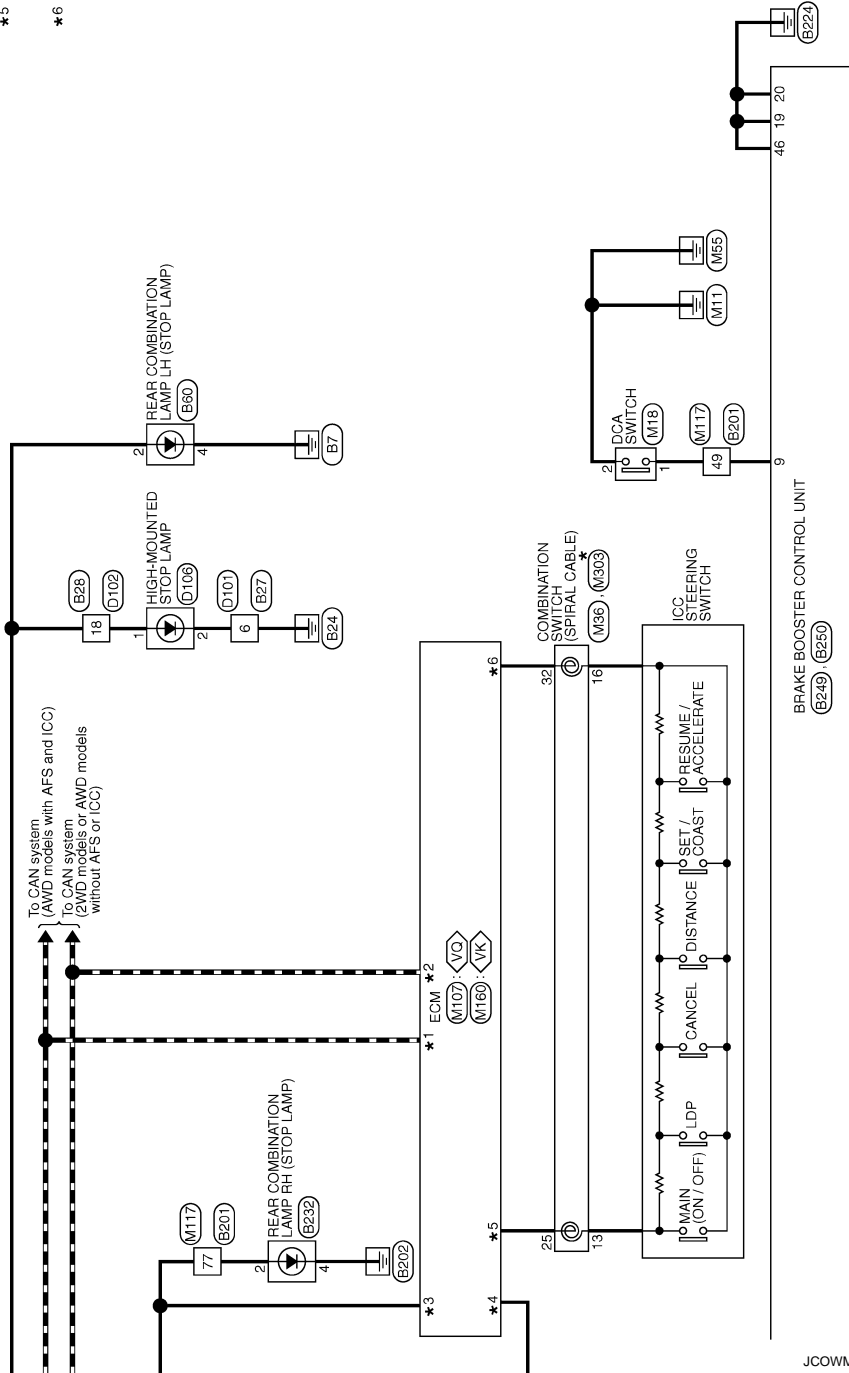
ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

- *1 114: <VQ>
- 105: <VK>
- *2 113: <VQ>
- 101: <VK>
- *3 122: <VQ>
- 110: <VK>
- *4 126: <VQ>
- 117: <VK>
- *5 101: <VQ>
- 102: <VK>
- *6 108: <VQ>
- 111: <VK>

<VQ> : With VQ engine
<VK> : With VK engine



*: This connector is not shown in "Harness Layout".

JCOWM0054GB

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ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]


DISTANCE CONTROL ASSIST

Connector No.	B28
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH




Terminal No.	18	Color of Wire	LG	Signal Name [Specification]
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Connector No.	B27
Connector Name	WIRE TO WIRE
Connector Type	M08MW-LC



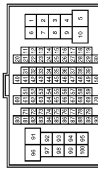
Terminal No.	6	Color of Wire	GR	Signal Name [Specification]
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Connector No.	B6
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS17FBR-CS




Terminal No.	5G	Color of Wire	LG	Signal Name [Specification]
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Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	80	Color of Wire	L	Signal Name [Specification]
Terminal No.	81	Color of Wire	P	Signal Name [Specification]
Terminal No.	82	Color of Wire	L	Signal Name [Specification]
Terminal No.	83	Color of Wire	P	Signal Name [Specification]


Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	TH04MW-NH



Terminal No.	4	Color of Wire	B	Signal Name [Specification]
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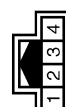
Terminal No.	47	Color of Wire	L	Signal Name [Specification]
Terminal No.	48	Color of Wire	P	Signal Name [Specification]
Terminal No.	49	Color of Wire	Y	Signal Name [Specification]
Terminal No.	50	Color of Wire	G	Signal Name [Specification]
Terminal No.	77	Color of Wire	LG	Signal Name [Specification]

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	1	Color of Wire	G	Signal Name [Specification]
Terminal No.	2	Color of Wire	R	Signal Name [Specification]
Terminal No.	31	Color of Wire	W	Signal Name [Specification]
Terminal No.	32	Color of Wire	GR	Signal Name [Specification]
Terminal No.	40	Color of Wire	LG	Signal Name [Specification]
Terminal No.	41	Color of Wire	SB	Signal Name [Specification]
Terminal No.	42	Color of Wire	V	Signal Name [Specification]
Terminal No.	43	Color of Wire	BR	Signal Name [Specification]
Terminal No.	44	Color of Wire	R	Signal Name [Specification]
Terminal No.	45	Color of Wire	G	Signal Name [Specification]
Terminal No.	46	Color of Wire	O	Signal Name [Specification]

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	TH04MW-NH



Terminal No.	2	Color of Wire	LG	Signal Name [Specification]
Terminal No.	4	Color of Wire	B	Signal Name [Specification]

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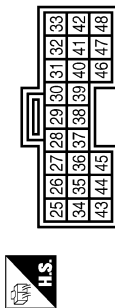
ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

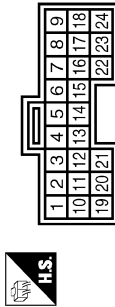
DISTANCE CONTROL ASSIST

Connector No.	B249
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FY



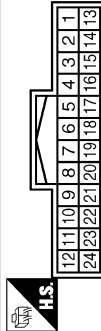
Terminal No.	Color of Wire	Signal Name [Specification]
33	G	IGNITION
42	G	IGNITION
46	B	GND
47	LG	BRAKE HOLD RLY DRIVE SIGNAL

Connector No.	B250
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BATTERY
2	W	BATTERY
5	P	ITS COMM-1
6	SR	RELEASE SW PWR
8	IR	BRAKE PRESSURE SEN PWR
9	Y	DCA SW
10	G	BOOSTER SOL PWR
12	R	BOOSTER SOL GND
14	L	ITS COMM-H
15	V	RELEASE SW (NO)
17	G	BRAKE PRESSURE SEN SIGNAL

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
18	LG	-

Connector No.	D108
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	TB02MW



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	-
2	B	-

19	B	GND
20	B	GND
21	GR	CHIME SIGNAL
22	BR	RELEASE SW (NO)
24	O	BRAKE PRESSURE SEN GND



Terminal No.	Color of Wire	Signal Name [Specification]
6	GR	-

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	-
40	L	-

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-MA-1V



Terminal No.	Color of Wire	Signal Name [Specification]
25	G	-
26	R	-

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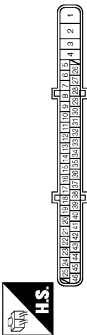
ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

DISTANCE CONTROL ASSIST

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	BA443EP-AH24-LH



Terminal No.	Color of Wire	Signal Name [Specification]
14	P	CAN-L
30	SB	BLS
35	L	CAN-H

Connector No.	E44
Connector Name	BRAKE BOOSTER
Connector Type	RV08FGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	V	-
4	Y	-
6	BR	-

Connector No.	E45
Connector Name	BRAKE PRESSURE SENSOR
Connector Type	AA230FBZ



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	-
2	L	-
3	LG	-

Connector No.	E67
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	RS08FB-PR



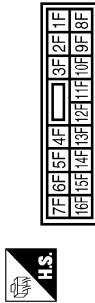
Terminal No.	Color of Wire	Signal Name [Specification]
1	R	IGNITION
2	L	ITS COMM-H
3	G	CAN-H
4	B	GND
5	P	ITS COMM-L
6	BR	CAN-L

Connector No.	E91
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	M08FGY-R-US



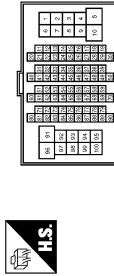
Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	G	-
4	G	-
6	W	-
7	L	-

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
2F	W	-
4F	G	-
8F	L	-

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TR03PW-GS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
5	Y	-
10	BR	-
16	SB	-
17	L	-
18	P	-
19	G	-
47	L	-
48	P	-
58	O	-
60	V	-
61	P	-







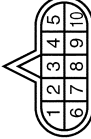




Terminal No.	Color of Wire	Signal Name [Specification]
62	LG	-
63	L	-
64	O	-
65	G	-
66	BR	-
76	L	-
79	SB	-

ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

DISTANCE CONTROL ASSIST

Connector No.	E110	Connector No.	E114	Connector No.	E115	Connector No.	E151	Connector No.	M2	Connector No.	M2
Connector Name	STOP LAMP SWITCH	IOC BRAKE SWITCH (WITH IOC)	ACCELERATOR PEDAL ACTUATOR	IOC BRAKE SWITCH (WITH IOC)	ACCELERATOR PEDAL ACTUATOR	ACCELERATOR PEDAL ACTUATOR	TGM (TRANSMISSION CONTROL MODULE)	FUSE BLOCK (J/B)	FUSE BLOCK (J/B)	FUSE BLOCK (J/B)	FUSE BLOCK (J/B)
Connector Type	MO4FW-LC	MO2FBR-LC	KD208FB	MO2FBR-LC	KD208FB	KD208FB	SP10FG	NS08FW-M2	NS10FW-CS	NS10FW-CS	NS10FW-CS
											
Terminal No.	1	1	1	1	1	1	1	1	1	1	1
Color of Wire	L	G	R	G	R	R	SB	O	P	P	L
Signal Name [Specification]	-	-	IGNITION	-	IGNITION	BATTERY	ITS COMM-L	ITS COMM-H	-	-	-
Terminal No.	2	2	2	2	2	2	3	3	3	3	3
Color of Wire	SB	SB	O	SB	O	O	P	P	P	L	L
Signal Name [Specification]	-	-	BATTERY	-	BATTERY	BATTERY	ITS COMM-L	ITS COMM-H	-	-	-
Terminal No.	3		3		3	3	4	4	4	4	4
Color of Wire	L		P		P	P	B	B	B	L	P
Signal Name [Specification]	-		ITS COMM-L		ITS COMM-L	ITS COMM-L	GND	GND	GND	-	-
Terminal No.	4		4		4	4	5	5	5	5	5
Color of Wire	W		L		L	L				P	P
Signal Name [Specification]	-		ITS COMM-H		ITS COMM-H	ITS COMM-H				-	-
Terminal No.											
Color of Wire											
Signal Name [Specification]											
Terminal No.	43	3	3B	3	3B	3B	3	3B	3B	3B	3B
Color of Wire	P	R	G	R	G	G	R	G	G	P	P
Signal Name [Specification]	-	CAN-H	-	CAN-H	-	-	CAN-L	-	-	-	-
Terminal No.	44	8	2A	8	2A	2A	8	2A	8B	8B	8B
Color of Wire	L	BR	G	BR	G	G	BR	G	Y	Y	Y
Signal Name [Specification]	-	CAN-L	-	CAN-L	-	-	CAN-L	-	-	-	-

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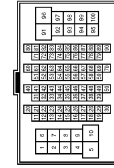
ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

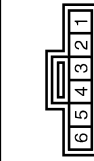
DISTANCE CONTROL ASSIST

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH20MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
5	R	-
10	BR	-
16	BR	-
17	L	-
18	P	-
19	G	-
23	L	-
48	P	-
58	O	-
60	W	-
61	P	-

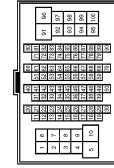
Connector No.	M1B
Connector Name	DCA SWITCH
Connector Type	TK06FGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	-
2	G	-

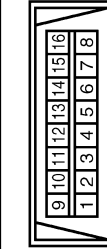
62	R	-
63	L	-
64	O	-
65	L	-
66	P	-
76	V	-
79	SB	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH20MW-CS16-TM4



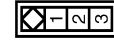
Terminal No.	Color of Wire	Signal Name [Specification]
80	L	-
81	P	-
82	L	-
83	P	-

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



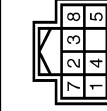
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
12	P	-
13	L	-
14	P	-

Connector No.	M17
Connector Name	ICC WARNING CHIME
Connector Type	AG09FW



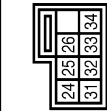
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
3	W	-

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L

Connector No.	M38
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-1V



Terminal No.	Color of Wire	Signal Name [Specification]
23	SB	-
32	V	-

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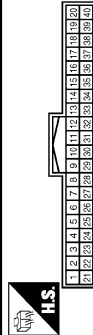
ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

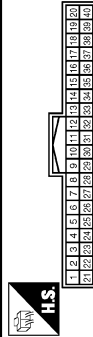
DISTANCE CONTROL ASSIST

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH467V-NH



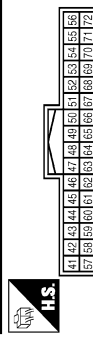
Terminal No.	Color of Wire	Signal Name [Specification]
2	LG	COMM (METER->AMP)
3	GR	COMM (AMP->METER)
24	BR	COMM (LCD->AMP)
26	Y	COMM (AMP->LCD)

Connector No.	M56
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH467V-NH



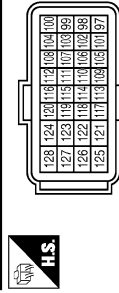
Terminal No.	Color of Wire	Signal Name [Specification]
4	P	STOP LAMP SW
7	GR	COMM (AMP->METER)
14	BR	COMM (LCD->AMP)
27	LG	COMM (METER->AMP)
34	Y	COMM (AMP->LCD)

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH12FW-NH



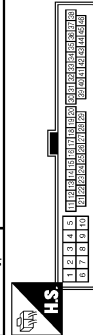
Terminal No.	Color of Wire	Signal Name [Specification]
53	G	IGN
54	Y	BAT
55	B	GND
56	L	CAN-H
71	B	GND
72	P	CAN-L

Connector No.	M107
Connector Name	ECM (WITH VQ ENGINE)
Connector Type	FR24FGY-R2P-R-LH-Z

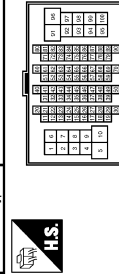


Terminal No.	Color of Wire	Signal Name [Specification]
101	SB	ASDOSW
108	V	GMDA ASGD
113	P	VEHCAN-L1
114	L	VEHCAN-H1
122	P	BRAKE
126	BR	BNC SW

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK36MW-NS10

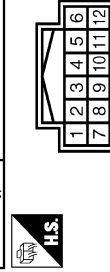


Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	47	L	- [With ICC]
48	P	-	[With ICC]
49	O	-	[With ICC]
50	G	-	[With ICC]
77	LG	-	

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
43	P	-
44	L	-

Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	BR	-
31	W	-
32	W	-
40	V	-
41	SB	- [With ICC]
42	W	-
43	P	- [With ICC]
44	R	-
45	L	- [With ICC]
46	O	- [With ICC]

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
4	L	CAN-H
6	L	CAN-H
7	P	CAN-L
10	P	CAN-L
12	P	CAN-L

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JCOWM0060GB


ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]


DISTANCE CONTROL ASSIST

Connector No.	M180
Connector Name	ECM (WITH VK ENGINE)
Connector Type	RH24FGY-R28-R-LH-Z



Terminal No.	Color of Wire	Signal Name [Specification]
101	P	VEHCAN-L
102	SB	ASCDSW
105	L	VEHCAN-H
110	P	BRAKE
111	V	GND-ASCDSW
117	BR	BNGSW

Connector No.	M303
Connector Name	COMBINATION SWITCH (SPRAL CABLE)
Connector Type	TK08FGY



Terminal No.	Color of Wire	Signal Name [Specification]
13	R	-
16	B	-

JCOWM0061GB

INFOID:000000003902615

DTC Inspection Priority Chart

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • C1F02: APA C/U MALF
3	<ul style="list-style-type: none"> • C1F01: APA MOTOR MALF • C1F03: APA HI TEMP • C1F05: APA PWR SUPPLY CIR • C1F06: CAN CIR2 • C1F07: CAN CIR1

DTC Index

INFOID:000000003902616

NOTE:

- The details of time display are as per the following.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past
- IGN counter is displayed in FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.

×: Applicable

CONSULT-III display	ICC system warning lamp	Fail-safe function	Reference
C1F01: APA MOTOR MALF	×	×	CCS-279
C1F02: APA C/U MALF	×	×	CCS-281
C1F03: APA HI TEMP	—	—	CCS-282
C1F05: APA PWR SUPPLY CIR	×	×	CCS-284
C1F06: CAN CIR2	×	×	CCS-286
C1F07: CAN CIR1	×	×	CCS-288
U1000: CAN COMM CIRCUIT	×	×	CCS-307
U1010: CONTROL UNIT (CAN)	×	×	CCS-310

CCS

DISTANCE CONTROL ASSIST SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[DCA]

SYMPTOM DIAGNOSIS

DISTANCE CONTROL ASSIST SYSTEM SYMPTOMS

Symptom Table

INFOID:000000003902617

Symptoms		Reference page
Operation	Switch does not turn ON	Refer to CCS-349, "Description" .
	Switch does not turn OFF	
	DCA system not activated (switch is ON)	Refer to CCS-351, "Description" .
Display/Chime	Information display is not illuminated (vehicle ahead indicator)	Refer to MWI-43, "Diagnosis Description" .
	Chime does not sound	Refer to CCS-353, "Description" .
Control	No force generated for putting back the accelerator pedal	Refer to CCS-355, "Description" .
Detection of lead vehicle	Frequently cannot detect the vehicle ahead	Refer to CCS-356, "Description" .
	Detection zone is short	
	System misidentifies a vehicle even though there is no vehicle ahead	<ul style="list-style-type: none"> • Adjust laser beam aiming: Refer to CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description". • Perform action test. Refer to CCS-187, "ACTION TEST : Description".
	System misidentifies a vehicle in the next lane	
	System does not detect the vehicle ahead at all	Refer to CCS-357, "Description" .

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[DCA]

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

Description

INFOID:000000003902620

The switch does not turn ON

- The DCA system switch indicator does not illuminate even if the DCA switch is depressed.

The switch does not turn OFF

- The DCA system switch indicator does not turn off even if the DCA switch is pressed when the DCA system switch indicator illuminates.

NOTE:

The system cannot be operated when setting conventional (fixed speed) cruise control mode.

Diagnosis Procedure

INFOID:000000003902621

1.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if the DTC is detected in self-diagnosis results of "ICC". Refer to [CCS-330, "DTC Index"](#).

Is any DTC detected?

- YES >> GO TO 6.
- NO >> GO TO 2.

2.DCA SWITCH INSPECTION

1. Start the engine.
2. Check that "DCA ON SW" operates normally in "DATA MONITOR" of "ICC" with CONSULT-III.

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> GO TO 5.

3.CHECK DCA SYSTEM SWITCH INDICATOR CIRCUIT

1. Start the engine.
2. Select the active test item "DCA INDICATOR" of "ICC" with CONSULT-III.
3. Check if the DCA system switch indicator illuminates when the test item is operated.

Is the inspection result normal?

- YES >> Refer to [GI-35, "Intermittent Incident"](#).
- NO >> GO TO 4.

4.CHECK DATA MONITOR OF UNIFIED METER AND A/C AMP.

Check that "DCA IND" operates normally in "DATA MONITOR" of "METER/M&A" with CONSULT-III.

Is the inspection result normal?

- YES >> Replace the combination meter.
- NO >> Replace the unified meter and A/C amp.

5.CHECK DCA SWITCH CIRCUIT

Check the DCA switch circuit. Refer to [CCS-275, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> GO TO 6.

6.REPAIR OR REPLACE MALFUNCTIONING PARTS.

Repair or replace malfunctioning parts.

>> GO TO 7.

7.CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)

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SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[DCA]

2. Check that the DCA system is normal.

>> INSPECTION END

DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)

< SYMPTOM DIAGNOSIS >

[DCA]

DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)

Description

INFOID:000000003902622

The DCA switch can be turned ON/OFF, but the DCA system does not operate.

NOTE:

Never start the operation under the following conditions.

No operation condition

- When the brake pedal depressed
- When the ICC system is set
- When the system judges that the vehicle comes to a standstill by the system control
- When the vehicle ahead is not detected

Operation cancellation condition

- When the DCA switch is turned to OFF
- When the system malfunction occurs
- When ABS or VDC (including the TCS) operates
- When the VDC is turned OFF
- When the snow mode switch is turned ON
- When driving into a strong light (i.e., sunlight)
- When the ICC sensor integrated unit body window is dirty and the measurement of the distance between the vehicles becomes difficult

Diagnosis Procedure

INFOID:000000003902623

1. CHECK CAUSE OF AUTOMATIC CANCELLATION

Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC" with CONSULT-III.

Is it displayed?

Not displayed >> GO TO 2.

"VHCL SPD UNMATCH" >> Refer to [CCS-210, "DTC Logic"](#).

"IGN LOW VOLT" >> Refer to [CCS-208, "DTC Logic"](#).

"CAN COMM ERROR" >> Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

"ABS/TCS/VDC CIRC" >> Refer to [CCS-212, "DTC Logic"](#).

"BCU CIRCUIT" >> Refer to [CCS-249, "DTC Logic"](#).

"APA HI TEMP" >> Refer to [CCS-282, "DTC Logic"](#).

2. PERFORM ALL OF THE SELF-DIAGNOSIS

1. Perform "All DTC Reading".

2. Check if any DTC is detected in self-diagnosis results of "ICC". Refer to [CCS-330, "DTC Index"](#).

Is any DTC detected?

YES >> GO TO 3.

NO >> GO TO 4.

3. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts identified by the self-diagnosis result.

>> GO TO 6.

4. CHECK EACH SWITCH AND VEHICLE SPEED SIGNAL

1. Start the engine.

2. Check that the following items operate normally in "DATA MONITOR" of "ICC".

- "VHCL SPEED SE"
- "BRAKE SW"
- "DCA ON SW"

Is there a malfunctioning item?

All items are normal >> GO TO 5.

"VHCL SPEED SE" >> Refer to [CCS-210, "DTC Logic"](#).

"BRAKE SW" >> Refer to [CCS-214, "DTC Logic"](#).

"DCA ON SW" >> Refer to [CCS-275, "DTC Logic"](#).

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DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)

< SYMPTOM DIAGNOSIS >

[DCA]

5. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-363. "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13. "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 6.

6. CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> INSPECTION END

CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[DCA]

CHIME DOES NOT SOUND

Description

INFOID:000000003902624

The warning chime may not sound in some cases when there is a short distance between vehicles. Some examples are:

- When the vehicles are traveling at the same speed and the distance between vehicles is not changing
- When the vehicle ahead is traveling faster and the distance between vehicles is increasing
- When a vehicle cuts in near own vehicle
- The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.
- The warning chime does not sound when the system does not detect any vehicle ahead. (Diagnose the conditions under which the system is detecting the vehicle ahead and when the system is malfunctioning. If there is any malfunction in detecting the vehicle ahead, check the system following the [CCS-356, "Description"](#).)

Diagnosis Procedure

INFOID:000000003902625

1.PERFORM ACTIVE TEST

Check if the warning chime sounds on the active test item "ICC BUZZER" of "ICC" with CONSULT-III.

Does the warning chime sound?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK THE MALFUNCTION SYMPTOM DURING WARNING CHIME OPERATION

1. Understand the vehicle ahead detection condition when the malfunction occurred. If the warning chime should have sounded, replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 8.

3.CHECK ICC WARNING CHIME CIRCUIT

Check the ICC warning chime circuit. Refer to [CCS-314, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 6.

4.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if the "U1000" is detected in self-diagnosis results of "ICC".

Is "U1000" detected?

YES >> GO TO 5.

NO >> GO TO 7.

5.CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to [CCS-306, "ICC SENSOR INTEGRATED UNIT : DTC Logic"](#).

>> GO TO 8.

6.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

>> GO TO 8.

7.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

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CCS

CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[DCA]

>> GO TO 8.

8. CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check if the DCA system is normal.

>> INSPECTION END

NO FORCE GENERATED FOR PUTTING BACK THE ACCELERATOR PEDAL

[DCA]

< SYMPTOM DIAGNOSIS >

NO FORCE GENERATED FOR PUTTING BACK THE ACCELERATOR PEDAL

Description

INFOID:000000003902626

The DCA switch can be turned ON/OFF but the actuation force of accelerator pedal is not generated.

NOTE:

- When the vehicle ahead detection indicator does not illuminate, the control and warning with the system are not performed.
- The actuation force of accelerator pedal may not be generated sufficiently depending on depressing method or depressing amount of accelerator pedal.

Diagnosis Procedure

INFOID:000000003902627

1.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if any DTC is detected in self-diagnosis results of "ICC" or "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> GO TO 2.
- NO >> GO TO 3.

2.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts. Refer to [CCS-330. "DTC Index"](#) (ICC) or [CCS-347. "DTC Index"](#) (ACCELE PEDAL ACT).

>> GO TO 5.

3.PERFORM ACTIVE TEST

Check if the accelerator pedal actuator operates by the active test items "ACCELERATOR PEDAL ACTUATOR TEST1" and "ACCELERATOR PEDAL ACTUATOR TEST2" of "ACCELE PEDAL ACT" with CONSULT-III.

Does it operate?

- YES >> GO TO 4.
- NO >> Replace the accelerator pedal assembly.

4.CHECK VEHICLE AHEAD DETECTION PERFORMANCE

Understand the vehicle ahead detection condition when the malfunction occurred. If the detecting function is malfunctioning, check according to [CCS-356. "Description"](#).

>> INSPECTION END

5.CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187. "ACTION TEST : Description"](#) for action test.)
2. Check if the DCA system is normal.

>> INSPECTION END

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FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[DCA]

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

Description

INFOID:000000003902628

Symptom check: Detection function may become unstable under the following conditions.

- When the reflector of vehicle ahead is broken or dirty.
- When the vehicle is driving on a curve such as S-curve where the curvature changes.
- When the vehicle is driving on up-and-down road or passing the peak or foot of slope or passing the break of the inclination of hill.

Diagnosis Procedure

INFOID:000000003902629

1.VISUAL CHECK (1)

Check ICC sensor integrated unit body window for contamination and foreign materials.

Do foreign materials adhere?

- YES >> GO TO 2.
- NO >> GO TO 3.

2.WIPE OUT DIRT AND FOREIGN OBJECTS

Wipe out the contamination and/or foreign materials from the ICC sensor integrated unit body window.

>> GO TO 6.

3.VISUAL CHECK (2)

Check ICC sensor integrated unit body window for cracks and/or scratches.

Are there cracks?

- YES >> GO TO 5.
- NO >> GO TO 4.

4.LASER BEAM AIMING ADJUSTMENT

1. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).
2. Perform action test. Refer to [CCS-187, "ACTION TEST : Description"](#).
3. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END
- NO >> GO TO 5.

5.REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 6.

6.CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> INSPECTION END

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

[DCA]

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

INFOID:000000003902630

When DCA system is active, the DCA system does not perform any control even through there is a vehicle ahead.

Diagnosis Procedure

INFOID:000000003902631

1. CHECK INFORMATION DISPLAY

1. Start the self-diagnosis mode of combination meter. Refer to [MWI-43, "Diagnosis Description"](#).
2. Check that the segment of information display is displayed normally.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace the combination meter.

2. VISUAL CHECK (1)

Check ICC sensor integrated unit body window for contamination and/or foreign materials.

Do foreign materials adhere?

- YES >> GO TO 3.
NO >> GO TO 4.

3. WIPE OUT DIRT AND FOREIGN MATERIALS

Wipe out the contamination and/or foreign materials from the ICC sensor integrated unit body window.

>> GO TO 7.

4. VISUAL CHECK (2)

Check ICC sensor integrated unit body window for cracks and/or scratches.

Are there cracks?

- YES >> GO TO 6.
NO >> GO TO 5.

5. LASER BEAM AIMING ADJUSTMENT

1. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).
2. Perform action test. Refer to [CCS-187, "ACTION TEST : Description"](#).
3. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END
NO >> GO TO 6.

6. REPLACE ICC SENSOR INTEGRATED UNIT

1. Replace the ICC sensor integrated unit. Refer to [CCS-363, "Exploded View"](#).
2. Adjust the laser beam aiming. Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

>> GO TO 7.

7. CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-187, "ACTION TEST : Description"](#) for action test.)
2. Check that the DCA system is normal.

>> INSPECTION END

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NORMAL OPERATING CONDITION

Description

INFOID:000000003902632

PRECAUTIONS FOR DISTANCE CONTROL ASSIST (DCA) SYSTEM

CAUTION:

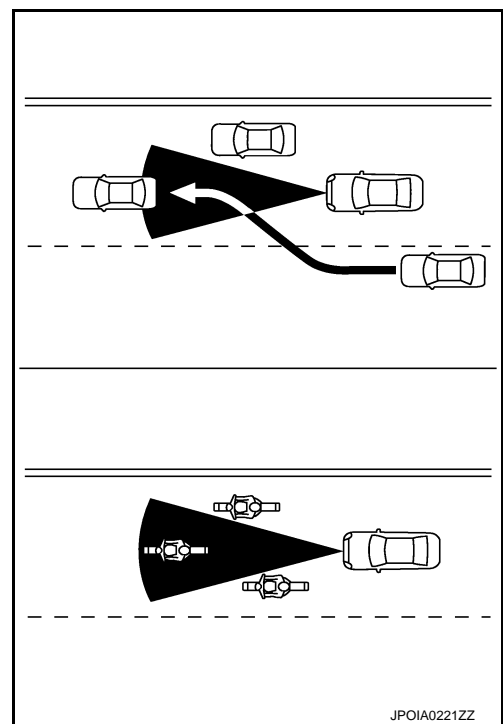
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill with a warning chime. To prevent the vehicle from moving, the driver must depress the brake pedal.
- The DCA system will not apply brake control while the driver is depressing the accelerator pedal.
- This system is only an aid to assist the driver and is not a collision warning or avoidance device. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- This system will not adapt automatically to road conditions. Do not use the system on roads with sharp curves, or on icy roads, in heavy rain or in fog.
- The distance sensor will not detect under most conditions.
 - Stationary and slow moving vehicles
 - Pedestrians or objects in the roadway
 - Oncoming vehicles in the same lane
 - Motorcycles traveling offset in the travel lane
- As there is a performance limit to the distance control function, never rely solely on the DCA system. This system does not correct careless, inattentive or absent-minded driving, or overcome poor visibility in rain, fog, or other bad weather. Decelerate the vehicle speed by depressing the brake pedal, depending on the distance to the vehicle ahead and the surrounding circumstances in order to maintain a safe distance between vehicles.
- The system may not detect the vehicle in front of own vehicle in certain road or weather conditions. To avoid accidents, never use the DCA system under the following conditions.
 - On roads with sharp curves
 - On slippery road surfaces such as on ice or snow, etc.
 - During bad weather (rain, fog, snow, etc.)
 - When strong light (for example, at sunrise or sunset) is directly shining on the front of the vehicle
 - When rain, snow or dirt adhere to the system sensor
 - On steep downhill roads (frequent braking may result in overheating the brakes)
 - On repeated uphill and downhill roads
- Do not use the DCA system if own vehicle are towing a trailer. The system may not detect a vehicle ahead.
- In some road or traffic conditions, a vehicle or object can unexpectedly come into the sensor detection zone and cause automatic braking. Driver may need to control the distance from other vehicles using the accelerator pedal. Always stay alert and avoid using the DCA system when it is not recommended in this section.
- The following are some conditions in which the sensor cannot detect the signals.
 - When the reflector of the vehicle ahead is positioned high on the vehicle (trailer, etc.)
 - When the reflector on the vehicle ahead is missing, damaged or covered
 - When the reflector of the vehicle ahead is covered with dirt, snow and road spray
 - When the snow or road spray from traveling vehicles reduces the sensor's visibility
 - When dense exhaust or other smoke (black smoke) from vehicles reduces the sensor's visibility
 - When excessively heavy baggage is loaded in the rear seat or the luggage room of own vehicle
- The DCA system is designed to automatically check the sensor's operation. When the sensor is covered with dirt or is obstructed, the system will automatically be canceled. If the sensor is covered with ice, a transparent or translucent vinyl bag, etc., the DCA system may not detect them. In these instances, the DCA system may not be able to decelerate the vehicle properly. Be sure to check and clean the sensor regularly.
- The DCA system is designed to maintain the proper distance to a vehicle moving ahead. To maintain the distance, the system will decelerate the vehicle as necessary. However, the DCA system can only apply up to 25% of the vehicles total braking power. If a vehicle moves into the traveling lane ahead or if a vehicle traveling ahead rapidly decelerates, the distance between vehicles may become closer because the DCA system cannot decelerate the vehicle quickly enough. If this occurs, the DCA system will sound a warning chime and blink the system display to notify the driver to take necessary action.
- The DCA system does not control vehicle speed or warn when driver approach stationary and slow moving vehicles. Driver must pay attention to vehicle operation to maintain proper distance from vehicles ahead.

NORMAL OPERATING CONDITION

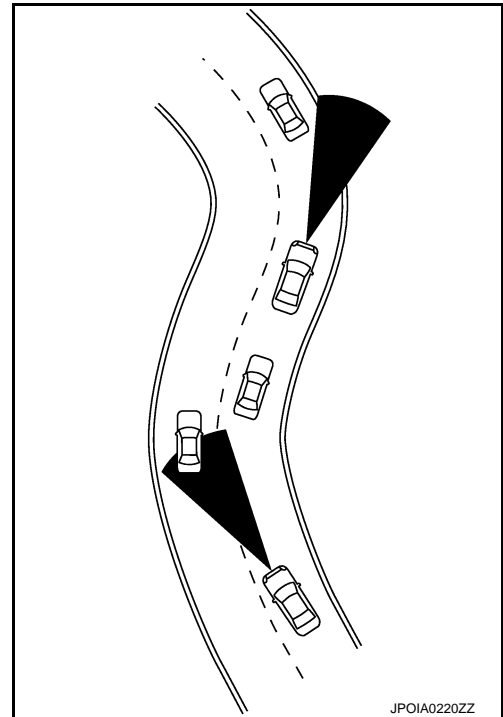
[DCA]

< SYMPTOM DIAGNOSIS >

- The detection zone of the sensor is limited. A vehicle ahead must be in the detection zone for the system to operate.
- A vehicle ahead may move outside of the detection zone due to its position within the same lane of travel. Motorcycles may not be detected in the same lane ahead if they are traveling offset from the center line of the lane. A vehicle that is entering the lane ahead may not be detected until the vehicle has completely moved into the lane. If this occurs, the system may warn driver by blinking the system indicator and sounding the chime. The driver may have to manually control the proper distance away from vehicle traveling ahead.



- When driving on some roads, such as winding, hilly, curved, narrow roads, or roads which are under construction, the sensor may detect vehicles in a different lane, or may temporarily not detect a vehicle traveling ahead. This may cause the system to work inappropriately. The detection of vehicles may also be affected by vehicle operation (steering maneuver or traveling position in the lane, etc.) or vehicle condition. If this occurs, the system may warn driver by blinking the system indicator and sounding the chime unexpectedly. The driver will have to manually control the proper distance away from the vehicle traveling ahead.
- The approach warning chime may sound and the system display may blink when the sensor detects some reflectors which are fitted on vehicles in other lanes or on the side of the road. This may cause the DCA system to operate inappropriately. The sensor may detect these reflectors when the vehicle is driven on winding roads, hilly roads or when entering or exiting a curve. The sensor may also detect reflectors on narrow roads or in road construction zones. In these cases driver will have to manually control the proper distance ahead of own vehicle. Also, the sensor sensitivity can be affected by vehicle operation (steering maneuver or driving position in the lane) or traffic or vehicle condition (for example, if a vehicle is being driven with some damage).



- The DCA system automatically decelerates own vehicle to help assist the driver to maintain a following distance from the vehicle ahead. Manually brake when deceleration is required to maintain a safe distance upon sudden braking by the vehicle ahead or when a vehicle suddenly appears in front of own vehicle. Always stay alert when using the DCA system.
- When the vehicle ahead detection indicator lamp is not illuminated, system will not control or warn the driver.
- Never place a foot under the brake pedal. A foot may be caught when the system controls the brake.
- Depending on the position of the accelerator pedal, the system may not be able to assist the driver to release the accelerator pedal appropriately.
- If the vehicle ahead comes to a standstill, the vehicle decelerates to a standstill within the limitations of the system. The system will release brake control with a warning chime once it judges the vehicle

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[DCA]

is at a standstill. To prevent the vehicle from moving, the driver must depress the brake pedal. [The system will resume control automatically once the system reaches 5 km/h (3 MPH)].

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000003902717

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions For Harness Repair

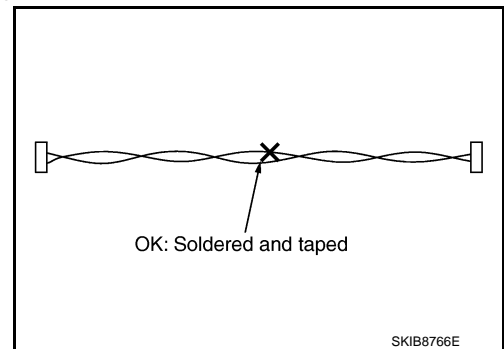
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ITS communication uses a twisted pair line. Be careful when repairing it.

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

A fray of twisted lines must be within 110 mm (4.33 in).



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PRECAUTIONS

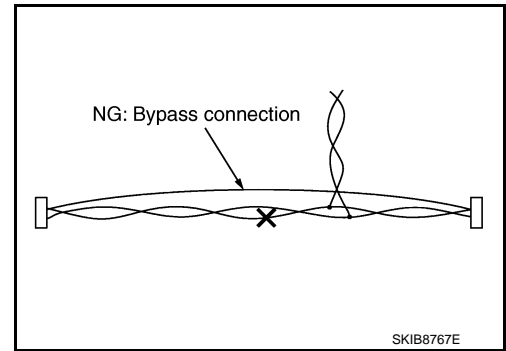
[DCA]

< PRECAUTION >

- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



DCA System Service

INFOID:000000003902635

CAUTION:

- Never look straight into the laser beam discharger when adjusting laser beam aiming.
- Turn the MAIN switch OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Never use the ICC sensor integrated unit removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of DCA system, then check the operation of DCA system after adjusting laser beam aiming if necessary.

ICC SENSOR INTEGRATED UNIT

< REMOVAL AND INSTALLATION >

[DCA]

REMOVAL AND INSTALLATION

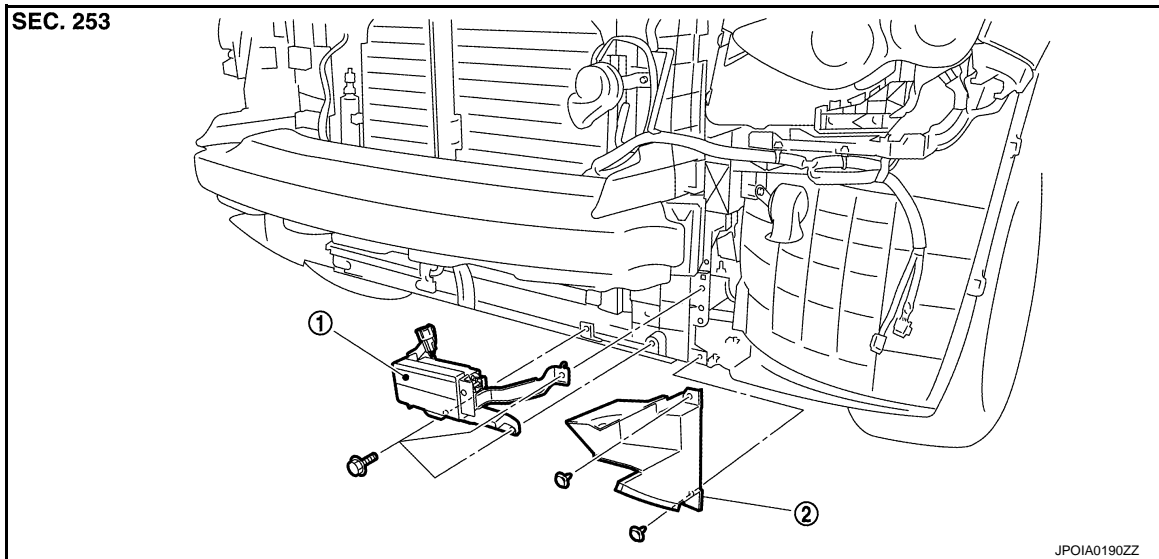
ICC SENSOR INTEGRATED UNIT

Exploded View

INFOID:000000003902636

CAUTION:

Always perform the laser beam aiming adjustment and check the operation after the replacement, removal and installation of ICC sensor integrated unit.



- 1. ICC sensor integrated unit
- 2. Air guide lower (LH)

Removal and Installation

INFOID:000000003902637

REMOVAL

1. Remove front bumper fascia. Refer to [EXT-12, "Exploded View"](#).
2. Remove air guide lower (LH). Refer to [DLK-232, "Exploded View"](#).
3. Disconnect ICC sensor integrated unit connector.
4. Remove mounting bolts from ICC sensor integrated unit.
5. Remove ICC sensor integrated unit.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Always perform the laser beam aiming adjustment and check the operation after the replacement, removal, and installation of ICC sensor integrated unit. Refer to [CCS-186, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ICC SENSOR INTEGRATED UNIT\) : Description"](#).

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BRAKE BOOSTER CONTROL UNIT

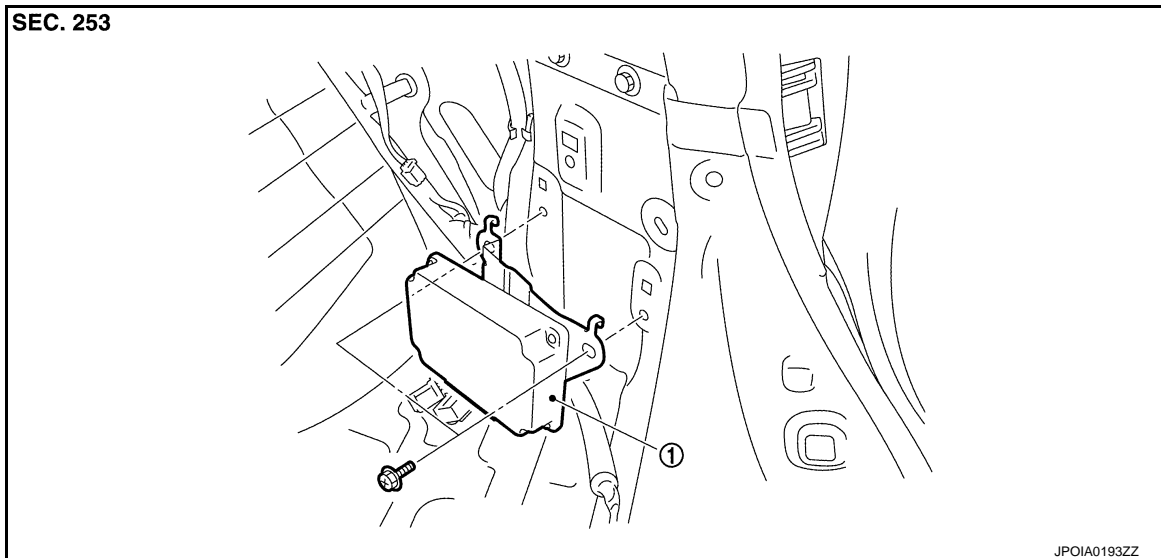
< REMOVAL AND INSTALLATION >

[DCA]

BRAKE BOOSTER CONTROL UNIT

Exploded View

INFOID:000000003902638



1. Brake booster control unit

Removal and Installation

INFOID:000000003902639

REMOVAL

1. Remove clips on the back of the luggage side finisher lower (RH) to obtain space for work. Refer to [INT-28, "Exploded View"](#).
2. Disconnect brake booster control unit connector.
3. Remove mounting bolts from brake booster control unit.
4. Remove brake booster control unit.

INSTALLATION

Install in the reverse order of removal.

ICC WARNING CHIME

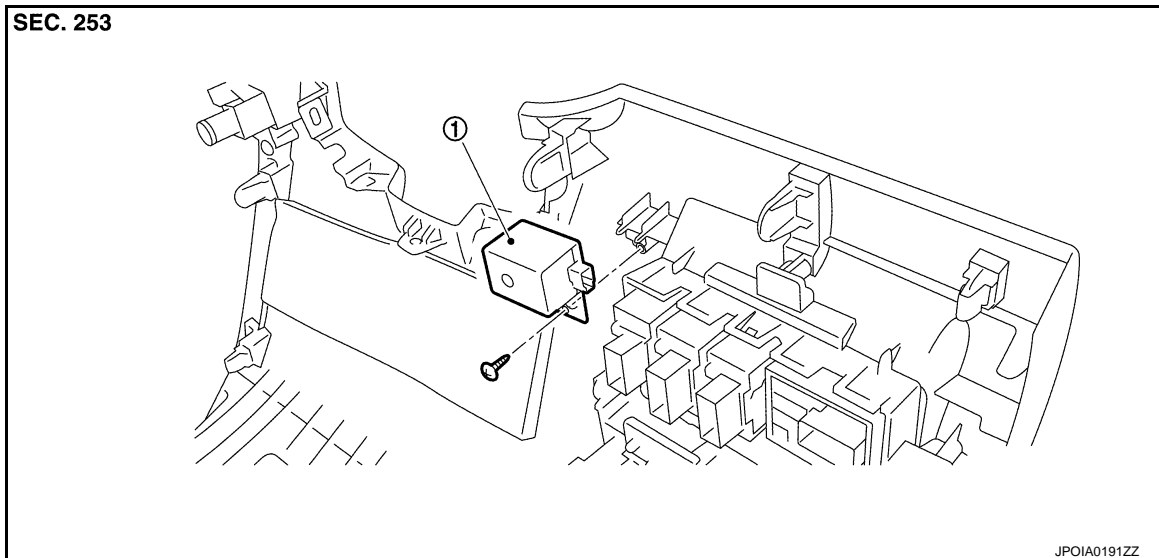
< REMOVAL AND INSTALLATION >

[DCA]

ICC WARNING CHIME

Exploded View

INFOID:000000003902640



1. ICC warning chime

Removal and Installation

INFOID:000000003902641

REMOVAL

1. Remove the instrument lower panel LH. Refer to [IP-11, "Exploded View"](#).
2. Remove mounting screw from ICC warning chime.
3. Remove ICC warning chime from the instrument lower panel LH.

INSTALLATION

Install in the reverse order of removal.

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ACCELERATOR PEDAL ASSEMBLY

< REMOVAL AND INSTALLATION >

[DCA]

ACCELERATOR PEDAL ASSEMBLY

Exploded View

INFOID:000000003902642

Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Exploded View"](#).

CAUTION:

Always perform accelerator pedal released position learning after replacement, removal, or installation of accelerator pedal assembly, and then check the DCA system operation. Refer to [CCS-186, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ACCELERATOR PEDAL ASSEMBLY\) : Description"](#).

DCA SWITCH

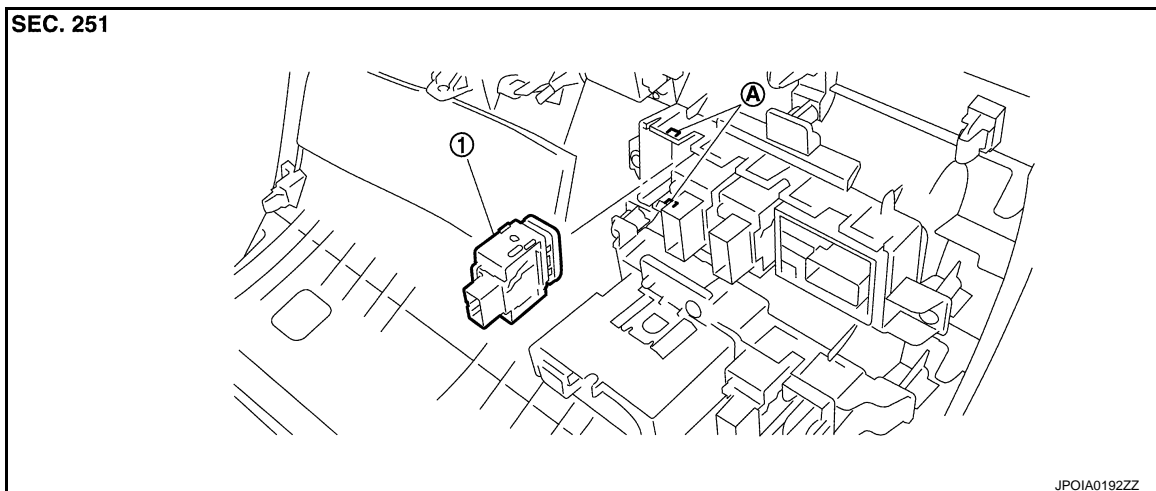
< REMOVAL AND INSTALLATION >

[DCA]

DCA SWITCH

Exploded View

INFOID:000000003943130



- 1. DCA switch
- A. Pawl

Removal and Installation

INFOID:000000003943131

REMOVAL

1. Remove the instrument lower panel LH. Refer to [IP-11, "Exploded View"](#).
2. Disengage the pawl. Then remove DCA switch.

INSTALLATION

Install in the reverse order of removal.

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DIAGNOSIS AND REPAIR WORK FLOW

[FCW]

< BASIC INSPECTION >

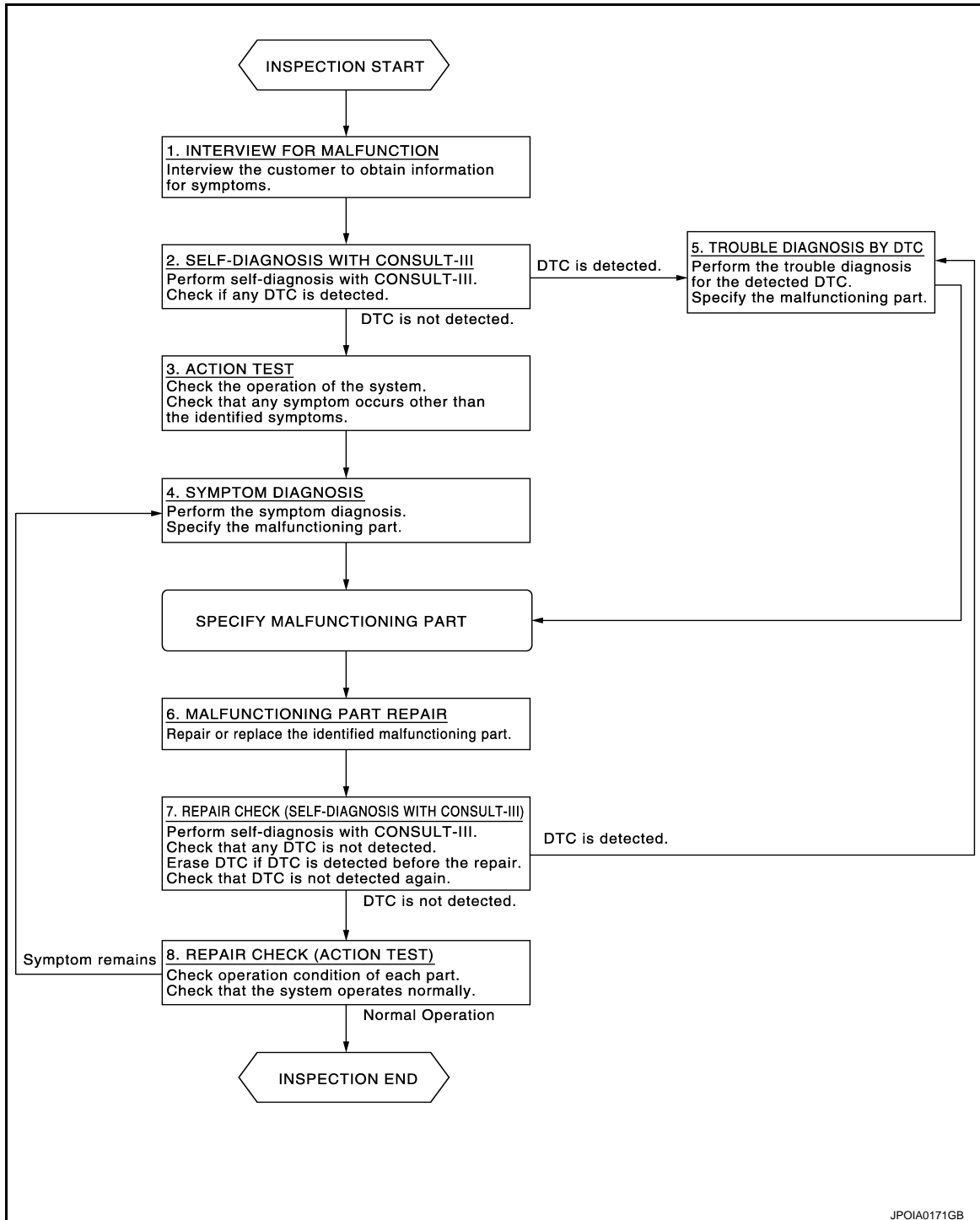
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000003902110

OVERALL SEQUENCE



DETAILED FLOW

NOTE:

The FCW system shares component parts with the ICC system. If the FCW system has a malfunction perform diagnosis for the ICC system.

1. INTERVIEW FOR MALFUNCTION

DIAGNOSIS AND REPAIR WORK FLOW

[FCW]

< BASIC INSPECTION >

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

NOTE:

The customers are not professionals. Never assume that “maybe the customer means...” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2. SELF-DIAGNOSIS WITH CONSULT-III

1. Perform “All DTC Reading” with CONSULT-III.
2. Check if the DTC is detected on the self-diagnosis results of “ICC” and/or “LANE CAMERA”.

Is any DTC detected?

- YES >> GO TO 5.
NO >> GO TO 3.

3. ACTION TEST

Perform the ICC system action test to check the operation status. Refer to [CCS-18, "ACTION TEST : Description"](#).

>> GO TO 4.

4. SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to [CCS-407, "Symptom Table"](#).

>> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

1. Check the DTC in the self-diagnosis results.
2. Perform trouble diagnosis for the detected DTC. Refer to [CCS-395, "DTC Index"](#) (ICC) and/or [CCS-406, "DTC Index"](#) (LANE CAMERA).

>> GO TO 6.

6. MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 7.

7. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

1. Erases self-diagnosis results.
2. Perform “All DTC Reading” again after repairing or replacing the specific items.
3. Check if the DTC is detected on the self-diagnosis results of “ICC”.

Is any DTC detected?

- YES >> GO TO 5.
NO >> GO TO 8.

8. REPAIR CHECK (ACTION TEST)

Perform the ICC system action test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there any malfunction symptom?

- YES >> GO TO 4.
NO >> INSPECTION END

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FORWARD COLLISION WARNING SYSTEM

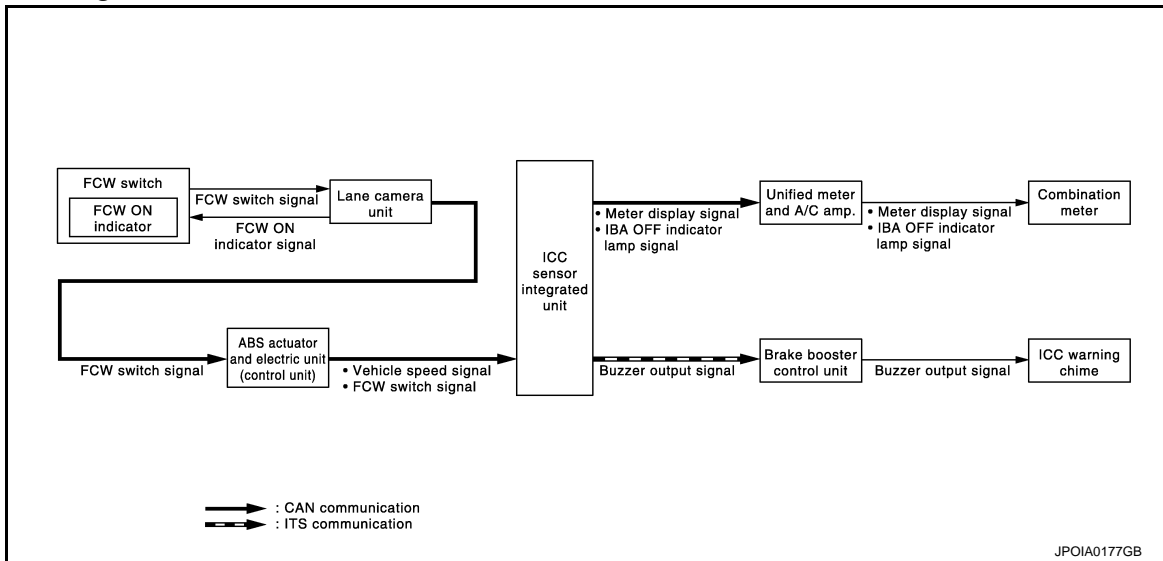
[FCW]

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

FORWARD COLLISION WARNING SYSTEM

System Diagram



System Description

INFOID:000000003902112

OUTLINE

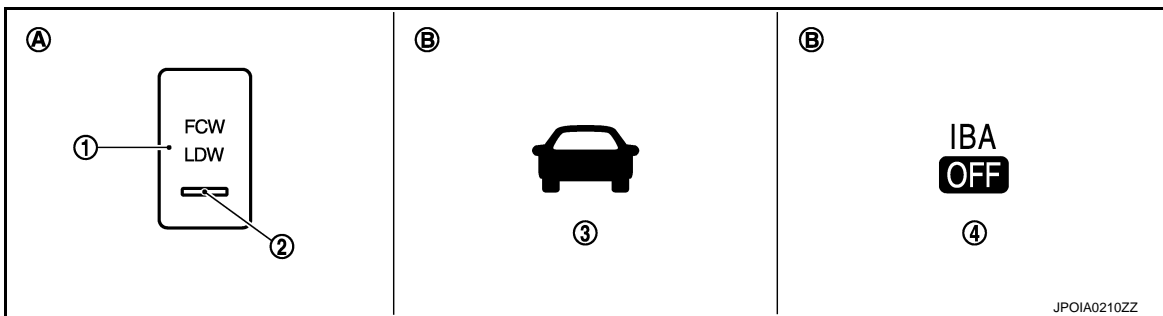
- The Forward Collision Warning (FCW) system will warn the driver by a warning lamp (vehicle ahead detection indicator) and chime when own vehicle is getting close to the vehicle ahead in the traveling lane.
- The FCW system will function when own vehicle is driven at speeds of approximately 15 km/h (10 MPH) and above.

NOTE:

The FCW system shares the diagnosis function with ICC system. They share the ICC sensor integrated unit.

BASIC OPERATIONS

Switches And Indicator/Warning Lamps



1. FCW switch (Shared with LDW system)
2. FCW ON indicator (Shared with LDW system)
3. Vehicle ahead detection indicator

4. IBA OFF indicator lamp


- A. On the instrument driver lower panel B. On the combination meter

Fail-safe Indication

FORWARD COLLISION WARNING SYSTEM

[FCW]

< SYSTEM DESCRIPTION >

Vehicle condition	Indication on the combination meter
<ul style="list-style-type: none"> When the FCW system malfunctions When the sensor window is dirty When driving into a strong light (i.e. sunlight) <p>NOTE: Check that the IBA system is not OFF. The indicator lamp is shared with IBA system.</p>	<div style="text-align: center;">  </div> <p style="text-align: right; font-size: small;">JPOIA0179ZZ</p>

NOTE:

FCW ON indicator blinks when "C1B03" is detected.

FCW INITIAL STATE CHANGE

CAUTION:

Never change FCW initial state "ON" ⇒ "OFF" without the consent of the customer.

FCW initial state can be changed.

- FCW initial ON* - FCW function is automatically turned ON, when the ignition switch OFF ⇒ ON.
- FCW initial OFF - FCW function is still OFF when the ignition switch OFF ⇒ ON.

*: Factory setting

How to change FCW initial state

- Turn ignition switch ON.
- Switch FCW and LDP functions to OFF.
- Push and hold FCW switch for more than 4 seconds.
- Buzzer sounds and blinking of the lane departure warning lamp informs that the FCW initial state change is completed.

FCW OPERATING CONDITION

- FCW ON indicator: ON
- Vehicle speed: Approximately 15 km/h (10 MPH) and above.

ICC sensor integrated unit input/output signal item

Input Signal Item

Transmission Unit	Signal Name	Description
ABS actuator and electric unit (control unit)	Vehicle speed signal	Receives the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) via CAN communication
Lame camera unit [through ABS actuator and electric unit (control unit)]	FCW switch signal	Receives the FCW switch signal from lame camera unit [through ABS actuator and electric unit (control unit)] via CAN communication.

Output Signal Item

Reception unit	Signal name		Description
Combination meter (through unified meter and A/C amp.)	Meter display signal	Vehicle ahead detection indicator signal	Transmits the meter display signal to the combination meter (through unified meter and A/C amp.) via CAN communication.
	IBA OFF indicator lamp signal		Transmits the IBA OFF indicator signal to the combination meter (through unified meter and A/C amp.) via CAN communication.
ICC warning chime	Buzzer output signal		<ul style="list-style-type: none"> Transmits the buzzer output signal to the brake booster control unit via ITS communication. The brake booster control unit outputs the buzzer output signal and operates the ICC warning chime.

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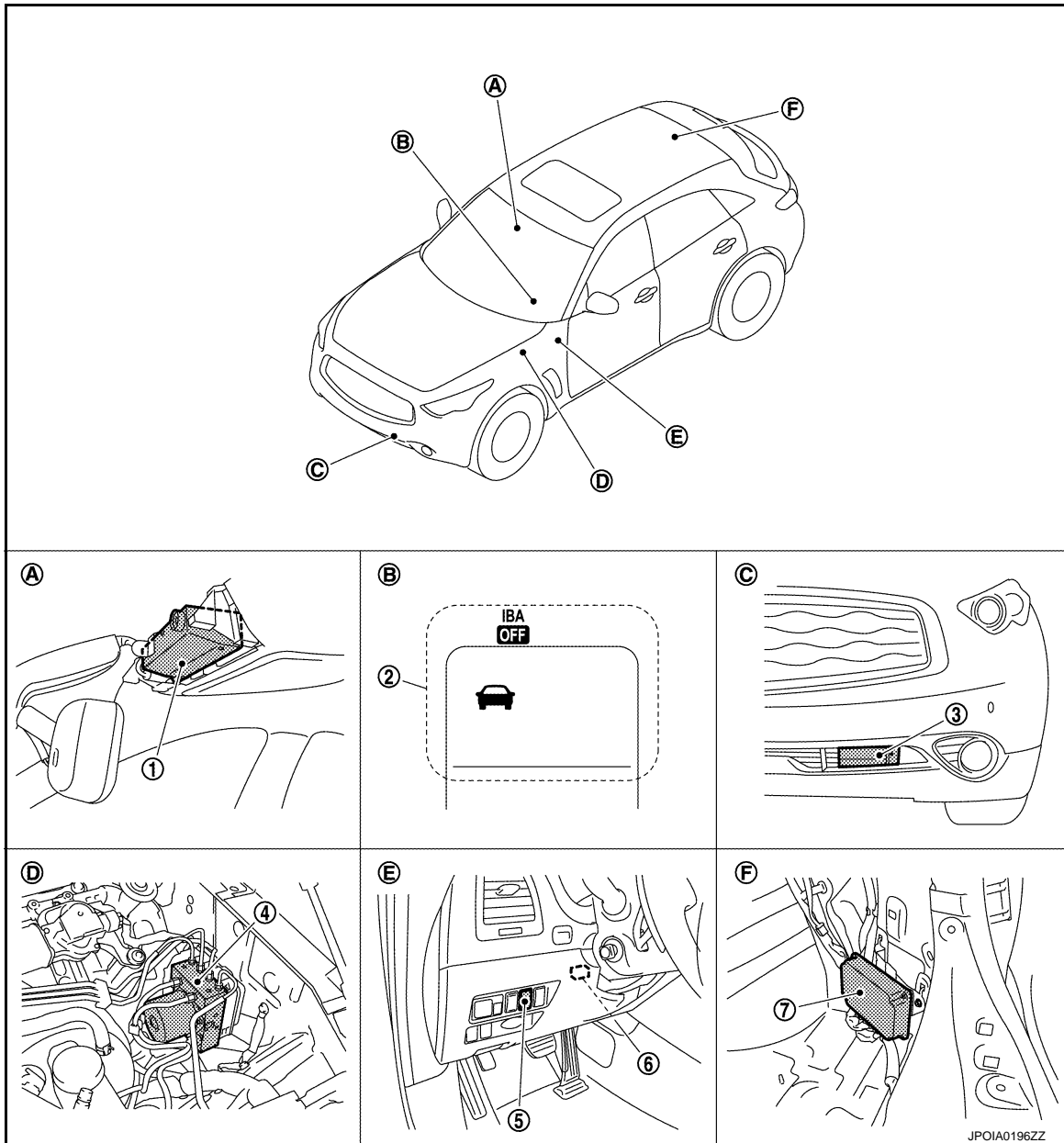
FORWARD COLLISION WARNING SYSTEM

< SYSTEM DESCRIPTION >

[FCW]

Component Parts Location

INFOID:000000003902113



- | | | |
|--|--|-------------------------------|
| 1. Lane camera unit | 2. Information display, IBA OFF indicator lamp | 3. ICC sensor integrated unit |
| 4. ABS actuator and electric unit (control unit) | 5. FCW switch | 6. ICC warning chime |
| 7. Brake booster control unit | | |
| A. Front of the map lamp | B. On the combination meter | C. Front bumper (LH) |
| D. Inside the brake master cylinder cover | E. Instrument driver lower panel (LH) | F. Luggage room (RH) |

Component Description

INFOID:000000003902114

FORWARD COLLISION WARNING SYSTEM

[FCW]

< SYSTEM DESCRIPTION >

Component	Description
Lane camera unit	<ul style="list-style-type: none"> • Transmits FCW switch signal to ABS actuator and electric unit (control unit) unit via CAN communication. • Controls the FCW ON indicator.
ABS actuator and electric unit (control unit)	<ul style="list-style-type: none"> • Transmits vehicle speed signal to ICC sensor integrated unit via CAN communication. • Transmits FCW switch signal to ICC sensor integrated unit via CAN communication.
FCW switch	Inputs the switch signal to lane camera unit.
FCW ON indicator (On the FCW switch)	Indicates FCW system status.
Brake booster control unit	<ul style="list-style-type: none"> • The ICC sensor integrated unit transmits the buzzer output signal to the brake booster control unit via ITS communication. • The brake booster control unit outputs the buzzer output signal to the ICC warning chime.
Unified meter and A/C amp.	Receives the meter display signal, and IBA OFF indicator lamp signal from ICC sensor integrated unit via CAN communication and transmits them to the combination meter via the communication line.
Combination meter	<p>Perform the following operations using the signals received from the unified meter and A/C amp. via the communication line.</p> <ul style="list-style-type: none"> • Displays the FCW operation status using the meter display signal. • Illuminates the IBA OFF indicator lamp using the IBA OFF indicator lamp signal.
ICC warning chime	Warning chime sounds when the vehicle distance from the vehicle ahead is too close

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DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

[FCW]

< SYSTEM DESCRIPTION >

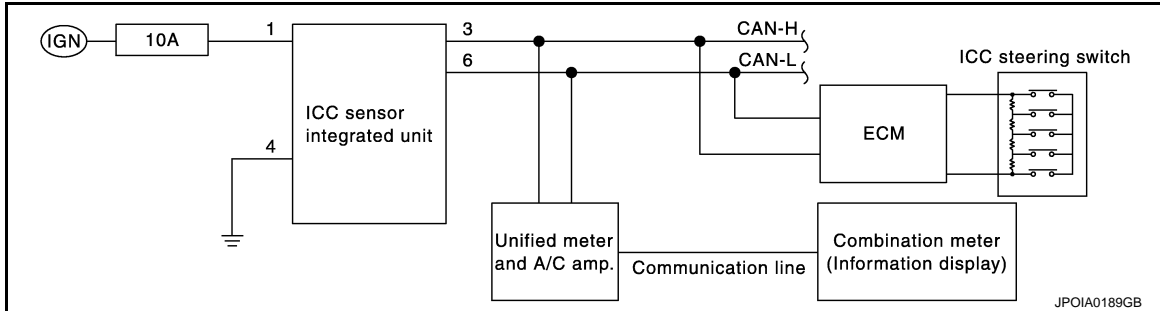
DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

Diagnosis Description

INFOID:000000004024974

The DTC is displayed on the information display by operating the ICC steering switch.

ON BOARD SELF-DIAGNOSIS SYSTEM DIAGRAM



ON BOARD SELF-DIAGNOSIS OPERATION PROCEDURE

CAUTION:

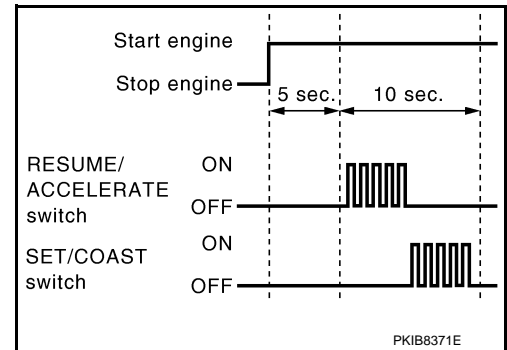
Start condition of on board self-diagnosis

- MAIN switch OFF
- DCA switch OFF
- Vehicle speed 0 km/h (0 MPH)

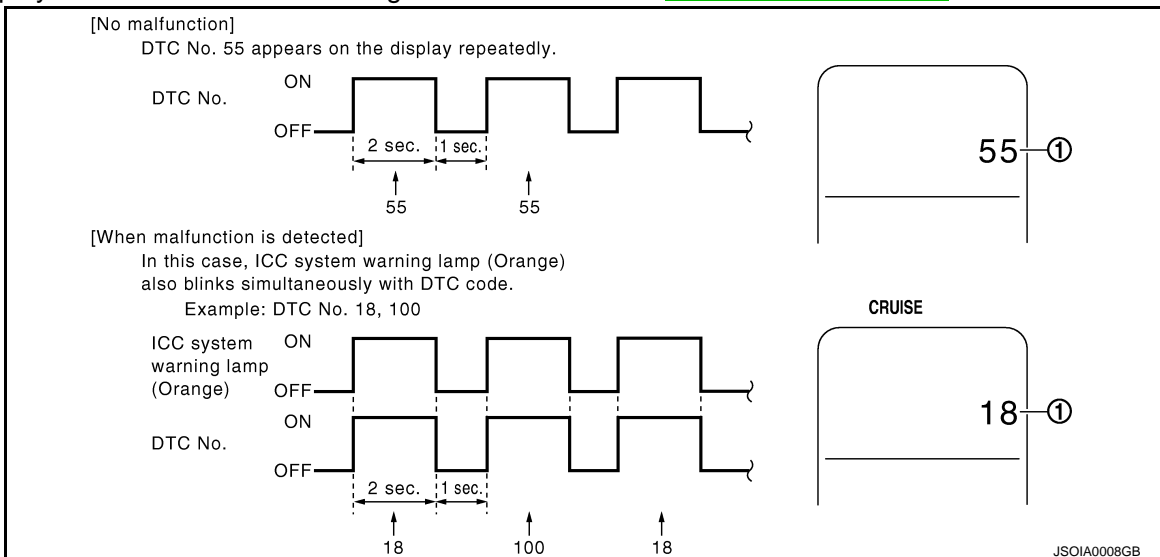
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [CCS-158, "DTC Index"](#).



NOTE:

- It displays for up to 5 minutes and then stops.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

[FCW]

< SYSTEM DESCRIPTION >

- If multiple malfunctions exist, up to 3 DTCs can be stored in memory at the most, and the most recent one is displayed first.

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

Assumed abnormal part		Inspection item
ICC system display	Combination meter malfunction	Check that the self-diagnosis function of the combination meter operates. Refer to MWI-43, "Diagnosis Description" .
	Unified meter and A/C amp. malfunction	Check power supply and ground circuit of unified meter and A/C amp. Refer to MWI-58, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure" .
	Communication error of the combination meter and the unified meter and A/C amp.	Start the self-diagnosis of the unified meter and A/C amp. and then check the self-diagnosis results. Refer to MWI-112, "DTC Index" .
ICC steering switch malfunction	Perform the inspection for DTC "C1A06". Refer to CCS-65, "Diagnosis Procedure" .	
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ICC sensor integrated unit malfunction		<ul style="list-style-type: none"> Check power supply and ground circuit of ICC sensor integrated unit. Refer to CCS-140, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure". Perform SELF-DIAGNOSIS for "ICC" with CONSULT-III, and then check the malfunctioning parts. Refer to CCS-158, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

- Turn the ignition switch OFF.
- Start the engine, and then start the on board self-diagnosis.
- Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

NOTE:

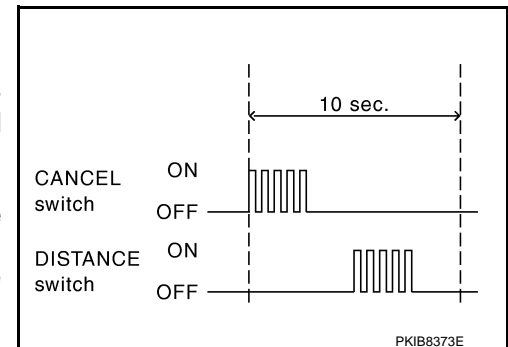
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

- DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

- Turn ignition switch OFF, and finish the diagnosis.



CONSULT-III Function (ICC)

INFOID:000000004024975

DESCRIPTION

CONSULT-III performs the following functions via CAN communication using ICC sensor integrated unit.

Diagnosis mode	Description
Work Support	<ul style="list-style-type: none"> It can monitor the adjustment direction indication in order to perform the laser beam aiming operation smoothly. Displays causes of automatic cancellation of the ICC system.
Self Diagnostic Result	Displays malfunctioning system memorized in ICC sensor integrated unit.
Data Monitor	Displays real-time input/output data of ICC sensor integrated unit.
Active Test	Enables operation check of electrical loads by transmitting driving signal to them.

CCS

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DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

[FCW]

< SYSTEM DESCRIPTION >

Diagnosis mode	Description
Ecu Identification	<ul style="list-style-type: none"> • Displays ICC sensor integrated unit part number. • Displays brake booster control unit part number. • Displays accelerator pedal assembly part number.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

WORK SUPPORT

Work support items	Description
CAUSE OF AUTO-CANCEL	Displays causes of automatic cancellation of the ICC system.
LASER BEAM ADJUST	Outputs laser beam, calculates dislocation of the beam, and indicates adjustment direction.

Display Items For The Cause Of Automatic Cancellation

NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

×: Applicable

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	DCA system	Description
OPERATING WIPER	×			The wiper operates at HI or LO (it includes when the wiper is operated at LO or HI with the wiper switch INT position)
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range.
LASER SUNBEAM	×		×	Intense light such as sunlight entered ICC sensor integrated unit light sensing part
LASER TEMP	×		×	Temperature around ICC sensor integrated unit became low
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
SNOW MODE SW	×		×	Snow mode switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from A/T vehicle speed
TIRE SLIP	×	×		Wheel slipped
IGN LOW VOLT	×	×	×	Power supply voltage became low
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 32 km/h (20 MPH)
CAN COMM ERROR	×	×	×	ICC sensor integrated unit received an abnormal signal with CAN communication
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system
BCU CIRCUIT	×	×	×	The brake booster control unit is malfunctioning

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[FCW]

INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously
PARKING BRAKE ON	×	×		The parking brake is operating
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high
NO RECORD	×	×	×	-

Laser Beam Adjust

Refer to [CCS-13, "LASER BEAM AIMING ADJUSTMENT : Description"](#).

SELF DIAGNOSTIC RESULT

Refer to [CCS-158, "DTC Index"](#).

DATA MONITOR

×: Applicable

Monitored item [Unit]	MAIN SIGNAL	Description
MAIN SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
SET/COAST SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CANCEL SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
RESUME/ACC SW [On/Off]	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
DISTANCE SW [On/Off]		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CRUISE OPE [On/Off]	×	Indicates whether controlling or not (ON means "controlling").
BRAKE SW [On/Off]	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication).
STOP LAMP SW [On/Off]	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication).
IDLE SW [On/Off]		Indicates [On/Off] status of idle switch read from ICC sensor integrated unit through CAN communication (ECM transmits On/Off status through CAN communication).
SET DISTANCE [Short/Mid/Long]	×	Indicates set distance memorized in ICC sensor integrated unit.
CRUISE LAMP [On/Off]	×	Indicates [On/Off] status of MAIN switch indicator output.
OWN VHCL [On/Off]		Indicates [On/Off] status of own vehicle indicator output.
VHCL AHEAD [On/Off]		Indicates [On/Off] status of vehicle ahead detection indicator output.
ICC WARNING [On/Off]		Indicates [On/Off] status of ICC system warning lamp output.
BA WARNING [On/Off]		Indicates [On/Off] status of IBA OFF indicator lamp output.
VHCL SPEED SE [km/h] or [mph]	×	Indicates vehicle speed calculated from ICC sensor integrated unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication].
SET VHCL SPD [km/h] or [mph]	×	Indicates set vehicle speed memorized in ICC sensor integrated unit.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[FCW]

Monitored item [Unit]	MAIN SIGNAL	Description
BUZZER O/P [On/Off]		Indicates [On/Off] status of ICC warning chime output.
THRTL SENSOR [deg]	×	NOTE: The item is displayed, but it is not monitored.
ENGINE RPM [rpm]		Indicates engine speed read from ICC sensor integrated unit through CAN communication (ECM transmits engine speed through CAN communication).
WIPER SW [Off/Low/High]		Indicates wiper [Off/Low/High] status (BCM transmits front wiper request signal through CAN communication).
YAW RATE [deg/s]		NOTE: The item is displayed, but it is not monitored.
RELEASE SW NO [On/Off]		Indicates [On/Off] status as judged from release switch signal. ON: When brake pedal is depressed. OFF: When brake pedal is not depressed.
RELEASE SW NC [On/Off]		Indicates [On/Off] status as judged from release switch signal. ON: When brake pedal is not depressed. OFF: When brake pedal is depressed.
STP LMP DRIVE [On/Off]	×	Indicates [On/Off] status of ICC brake hold relay drive output.
PRESS SENS [bar]	×	Indicates brake fluid pressure value calculated from signal voltage of brake pressure sensor.
D RANGE SW [On/Off]		Indicates [On/Off] status of "D" or "DS" or "M" positions read from ICC sensor integrated unit through CAN communication; ON when position "D" or "DS" or "M" (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]		Indicates shift position signal read from ICC sensor integrated unit through CAN communication (TCM transmits shift position signal through CAN communication).
PWR SUP MONI [V]	×	Indicates IGN voltage input by ICC sensor integrated unit.
VHCL SPD AT [km/h] or [mph]		Indicates vehicle speed calculated from A/T vehicle speed sensor read from ICC sensor integrated unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication).
THRTL OPENING [%]	×	Indicates throttle position read from ICC sensor integrated unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]		Indicates A/T gear position read from ICC sensor integrated unit through CAN communication (TCM transmits current gear position signal through CAN communication).
CLUTCH SW SIG [On/Off]	×	NOTE: The item is displayed, but it is not monitored.
NP SW SIG [On/Off]	×	NOTE: The item is displayed, but it is not used.
PKB SW [On/Off]		Parking brake switch status [On/Off] judged from the parking brake switch signal that ICC sensor integrated unit readout via CAN communication is displayed (Unified meter and A/C amp. transmits the parking brake switch signal via CAN communication)
MODE SIG [Off, ICC, ASCD]		Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode].
SET DISP IND [On/Off]		Indicates [On/Off] status of SET switch indicator output.
DISTANCE [m]		Indicates the distance from the vehicle ahead.
RELATIVE SPD [m/s]		Indicates the relative speed of the vehicle ahead.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

[FCW]

< SYSTEM DESCRIPTION >

Monitored item [Unit]	MAIN SIGNAL	Description
DCA ON SW [On/Off]	×	Status [On/Off] judged from DCA switch signal that ICC sensor integrated unit readout via ITS communication is displayed (Brake booster control unit transmits the DCA switch signal via ITS communication).
DCA ON IND [On/Off]		The status [On/Off] of DCA system switch indicator output is displayed.
DCA VHL AHED [On/Off]		The status [On/Off] of vehicle ahead detection indicator output in DCA system is displayed.
APA TEMP [°C]		The accelerator pedal actuator integrated motor temperature that the ICC sensor integrated unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication).
APA PWR [V]		Accelerator pedal actuator power supply voltage that the ICC sensor integrated unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication).
IBA SW [On/Off]		Status [On/Off] judged from IBA OFF switch signal that ICC sensor integrated unit readout via ITS communication is displayed (Brake booster control unit transmits the IBA OFF switch signal via ITS communication).

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the ICC system warning lamp is illuminated.**
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
METER LAMP	The ICC system warning lamp, MAIN switch indicator, SET switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary.
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary.
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated.
BOOSTER SOL/V	The booster solenoid can be operated as necessary, and the brake can be operated.
ICC BUZZER	The ICC warning chime can sound by ON/OFF operations as necessary.
ACCELERATOR PEDAL ACTUATOR	The accelerator pedal actuator can be operated as necessary.

METER LAMP

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	
METER LAMP	Off	Stops transmitting the signals below to end the test. <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	OFF
	On	Transmits the following signals to the unified meter and A/C amp. via CAN communication. <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	ON

DCA INDICATOR

NOTE:

The test can be performed only when the engine is running.

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[FCW]

Test item	Operation	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test.	OFF
	On	Transmits the DCA system switch indicator signal to the unified meter and A/C amp. via CAN communication.	ON

STOP LAMP

Test item	Operation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal below to end the test.	OFF
	On	Transmits the ICC brake hold relay drive signal to the brake booster control unit via ITS communication.	ON

BOOSTER SOL/V

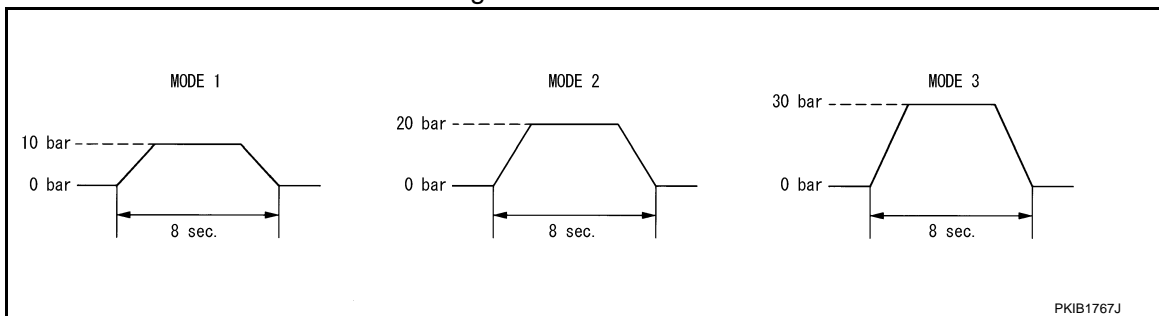
NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	"PRESS SENS" value
BOOSTER SOL/V	MODE1	Transmits the brake fluid pressure command signal to the brake booster control unit via ITS communication.	10 bar
	MODE2		20 bar
	MODE3		30 bar
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3".	—
	Reset	Stops transmitting the brake fluid pressure command signal below to end the test.	—
	End	Returns to the "SELECT TEST ITEM" screen.	—

NOTE:

The test is finished in 10 seconds after starting.



ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signal to the brake booster control unit via ITS communication.	Intermittent beep sound
	MODE2		Continuous beep sound
	MODE3		Beep sound
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3".	—
	Reset	Stops transmitting the buzzer output signal below to end the test.	—
	End	Returns to the "SELECT TEST ITEM" screen.	—

ACCELERATOR PEDAL ACTUATOR

DIAGNOSIS SYSTEM (ICC SENSOR INTEGRATED UNIT)

< SYSTEM DESCRIPTION >

[FCW]

CAUTION:

- Shift the selector lever to “P” position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

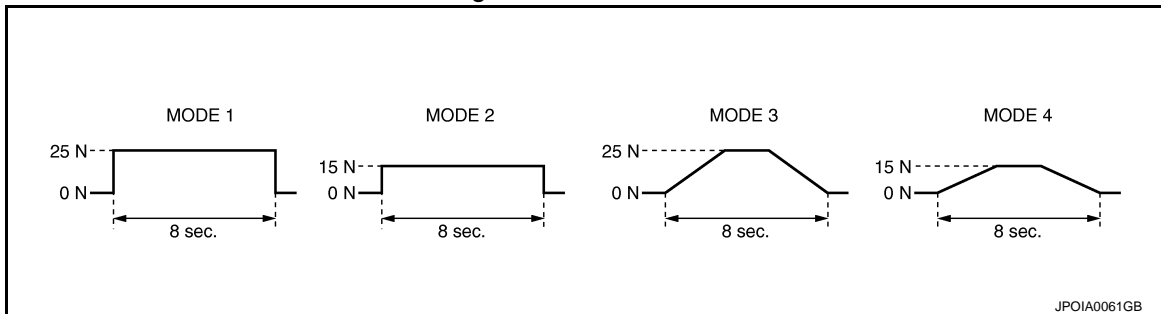
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

Test item	Operation	Description	Accelerator pedal operation
ACCELERATOR PEDAL ACTUATOR	MODE1	Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.	Constant with a force of 25 N for 8 seconds
	MODE2		Constant with a force of 15 N for 8 seconds
	MODE3		Change up to a force of 25 N for 8 seconds
	MODE4		Change up to a force of 15 N for 8 seconds
	Test start	Starts the tests of “MODE1”, “MODE2”, “MODE3”, and “MODE4”.	—
	Reset	Stops transmitting the accelerator pedal feedback force control signal below to end the test.	—
	End	Returns to the “SELECT TEST ITEM” screen.	—

NOTE:

The test is finished in 10 seconds after starting.



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CCS

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

[FCW]

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

CONSULT-III Function (LANE CAMERA)

INFOID:000000004024976

DESCRIPTION

CONSULT-III performs the following functions by communicating with the lane camera unit.

Select diag mode	Function
Work support	<ul style="list-style-type: none"> Performs the camera aiming. Displays causes of automatic cancellation of the LDP function.
Self Diagnostic Result	Displays memorized DTC in the lane camera unit.
Data Monitor	Displays real-time data of lane camera unit.
Active Test	Enables operation check of electrical loads by sending driving signal to them.
Ecu Identification	Displays part number of lane camera unit.

WORK SUPPORT

Work support item	Function
CAUSE OF AUTO-CANCEL	Indicates causes of automatic cancellation of the LDP.
AUTO AIM	Outputs camera unit, calculates dislocation of the camera, and displays adjustment direction. Refer to CCS-418, "CAMERA AIMING ADJUSTMENT : Description" .
AIM CHECK	<p>NOTE: The item is indicated, but not used.</p>

Cause of Auto-Cancel Display Item List

When LDP control is canceled under the operating condition, "CAUSE OF AUTO-CANCEL" is memorized.

- Last five cancel (system cancel) causes are displayed.
- "CAUSE OF AUTO-CANCEL" displays the number of times of ignition switch ON/OFF up to a maximum of "39". "39" is kept even when the number exceeds "39". The number returns to 0 when detecting the same cancellation causes are detected.

Cause of cancellation	Description
NO RECORD	—
Operating VDC/ABS	VDC or ABS function was operated.
Vehicle dynamics	Vehicle behavior exceeds specified value.
Steering speed	Steering speed was more than the specified value in evasive direction.
End by yaw angle	Yaw angle was the end of LDP control.
Departure yaw large	Detected more than the specified value of yaw angle in departure direction.
ICC WARNING	Target approach warning of ICC system was activated.
VDC OFF SW	VDC OFF switch was pressed.
CURVATURE	Road curve was more than the specified value.
Steering angle large	Steering angle was more than the specified value.
ICC main SW hold ON	ICC MAIN switch was held ON for more than a certain period.
Brake is operated	Brake pedal was operated.
Operating BA	IBA (Intelligent Brake Assist) was activated.
Lateral offset	Distance of vehicle and lane was detached in lateral direction more than the specified value.
Lane marker lost	Lane camera unit lost the trace of lane marker.
Lane marker unclear	Detected lane marker was unclear.
Bank	Road bank angle was more than the specified value.
Yaw acceleration	Detected yawing speed was more than the specified value.
Deceleration large	Deceleration in a longitudinal direction was more than the specified value.

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

[FCW]

< SYSTEM DESCRIPTION >

Accel is operated	Accelerator pedal was depressed.	A
Departure steering	Steering wheel was steered more than the specified value in departure direction.	B
Evasive steering	Steering wheel was steered more than the specified value in the evasive direction.	B
R range	Selector lever was operated to R range.	B
Parking brake drift	Rear wheels lock was detected.	B
Not operating condition	Did not meet the operating condition (vehicle speed, turn signal operation, etc.).	C

SELF DIAGNOSTIC RESULT

Displays memorized DTC in lane camera unit. Refer to [CCS-483, "DTC Index"](#).

DATA MONITOR

Monitored Item [unit]	Description	
LDW SW [On/Off]	Switch status judged from LDW switch signal NOTE: Shared with the FCW system	E
LDW ON LAMP [On/Off]	Signal output status of LDW ON indicator NOTE: Shared with the FCW system	F
LDP ON IND [On/Off]	Request signal status of LDP ON indicator lamp	G
LANE DPRT W/L [On/Off]	Request signal status of lane departure warning lamp	H
BUZZER OUTPUT [On/Off]	Signal output status of lane departure warning buzzer	H
LC INACCURAT [On/Off]	Lane camera unit status	I
CAM HIGH TEMP [On/Off]	Status of lane camera unit high temperature judgment	I
VHCL SPD SE [km/h] or [mph]	Vehicle speed received from ABS actuator and electric unit (control unit) via CAN communication	J
TURN SIGNAL [Off/LH/RH]	Status of "Turn signal" determined from BCM via CAN communication	J
LANE DETCT LH [On/Off]	Left side lane marker detection	K
LANE DETCT RH [On/Off]	Right side lane marker detection	K
CROSS LANE LH [On/Off]	Condition that the vehicle is crossing left lane marker	L
CROSS LANE RH [On/Off]	Condition that the vehicle is crossing right lane marker	L
WARN LANE LH [On/Off]	Warning for left lane marker	M
WARN LANE RH [On/Off]	Warning for right lane marker	M
VALID POS LH [VLD/INVLD]	Lateral position for left lane marker is valid	N
VALID POS RH [VLD/INVLD]	Lateral position for right lane marker is valid	N
AIMING DONE [OK/NG]	Status that camera aiming is done	P
AIMING RESULT [OK/NOK]	Result of camera aiming	P
XOFFSET [pixel]	Lane camera unit installation condition	
CHK AIM YAW [deg]	Check result of camera aiming	
CHK AIM ROLL [deg]	Check result of camera aiming	
CHK AIM PITCH [deg]	Check result of camera aiming	
FCTRY AIM YAW [deg]	Lane camera unit installation condition	
FCTRY AIM ROL [deg]	Lane camera unit installation condition	
FCTRY AIM PIT [deg]	Lane camera unit installation condition	

ACTIVE TEST

CAUTION:

- Never perform the active test while driving.
- Active test cannot be started while the lane departure warning lamp is illuminated.

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

[FCW]

Active test item	Operation	Description
BUZZER DRIVE	On	Outputs the voltage to sound the lane departure warning buzzer.
	Off	Stops the voltage to sound the lane departure warning buzzer.
LDW ON IND	On	Outputs the voltage to illuminate the LDW ON indicator (on the LDW switch). NOTE: Shared with the FCW system
	Off	Stops the voltage to illuminate the LDW ON indicator.
LDP ON IND	On	Requests the LDP ON indicator lamp ON [on the combination meter (Green)] to combination meter (through unified meter and A/C amp.) via CAN communication.
	Off	Stops the illumination request.
LANE DEPARTURE W/L	On	Requests the lane departure warning lamp ON [on the combination meter (Yellow)] to combination meter (through unified meter and A/C amp.) via CAN communication.
	Off	Stops the illumination request.

NOTE:

"Active test" of indicator/warning lamp cannot be performed when applicable indicator/warning lamp is turned ON.

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

ECU DIAGNOSIS INFORMATION

ICC SENSOR INTEGRATED UNIT

Reference Value

INFOID:000000004024979

VALUES ON THE DIAGNOSIS TOOL

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and operate the ICC system.	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	<ul style="list-style-type: none"> Start the engine and turn the ICC system ON. Press the DISTANCE switch to change the vehicle-to-vehicle distance setting. 	When set to "long"	Long
		When set to "middle"	Mid
		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch.	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Start the engine and press MAIN switch.	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press the MAIN switch.	When ICC system is malfunctioning (ICC system warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor item	Condition		Value/Status
BA WARNING	Engine running	IBA OFF indicator lamp ON • When IBA system is malfunctioning • When IBA system is turned to OFF	On
		IBA OFF indicator lamp OFF • When IBA system is normal • When IBA system is turned to ON	Off
VHCL SPEED SE	While driving		Value of vehicle speed signal (wheel speed)
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed.
BUZZER O/P	Engine running	When the buzzer output signal is output	On
		When the buzzer output signal is not output	Off
THRTL SENSOR	NOTE: The item is indicated, but not monitored		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating	Off
		Wiper LO operation	Low
		Wiper HI operation	High
YAW RATE	NOTE: The item is indicated, but not monitored		0.0
RELEASE SW NO	Engine running	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
RELEASE SW NC	Engine running	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When ICC brake hold relay is activated	On
		When the ICC brake hold relay is not activated	Off
PRESS SENS	Engine running	When brake pedal is not depressed	0.0
		When brake pedal is depressed	Brake fluid pressure value
D RANGE SW	Engine running	When the selector lever is in "D", "DS" position or manual mode	On
		When the selector lever is in any position other than "D", "DS" or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in "N", "P" position	On
		When the selector lever is in any position other than "N", "P"	Off
PWR SUP MONI	Engine running		Power supply voltage value of ICC sensor integrated unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position.
GEAR	While driving		Displays the shift position.

ICC SENSOR INTEGRATED UNIT

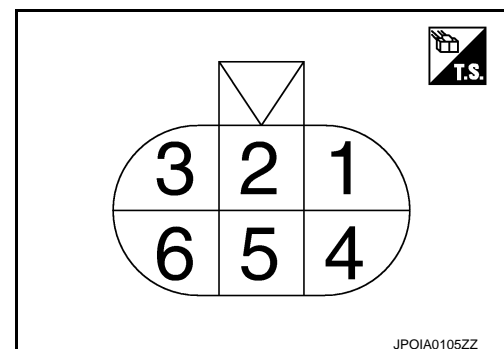
< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor item	Condition	Value/Status	
CLUTCH SW SIG	NOTE: The item is indicated, but not monitored	Off	
NP SW SIG	NOTE: The item is indicated, but not used	—	
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated	Off
		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
SET DISP IND	<ul style="list-style-type: none"> • Start the engine and activate the conventional (fixed speed) cruise control mode. • Press SET/COAST switch 	SET switch indicator lamp ON	On
		SET switch indicator lamp OFF	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected	Displays the distance from the preceding vehicle.
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected	Displays the relative speed.
		When a vehicle ahead is not detected	0.0
DCA ON SW	Ignition switch ON	When the DCA switch is not pressed	Off
		When the DCA switch is pressed	On
DCA ON IND	Start the engine	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
APA TEMP	Engine running	Display the accelerator pedal actuator integrated motor temperature	
APA PWR	Ignition switch ON	Power supply voltage	
IBA SW	Ignition switch ON	When the IBA OFF switch is not pressed	Off
		When the IBA OFF switch is pressed	On

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TERMINAL LAYOUT



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ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
2 (L)		ITS communication-H	Input/ Output	—	—
3 (G)		CAN-H	Input/ Output	—	—
4 (B)		Ground	—	Ignition switch ON	0 V
5 (P)		ITS communication-L	Input/ Output	—	—
6 (BR)		CAN-L	Input/ Output	—	—

ICC SENSOR INTEGRATED UNIT

[FCW]

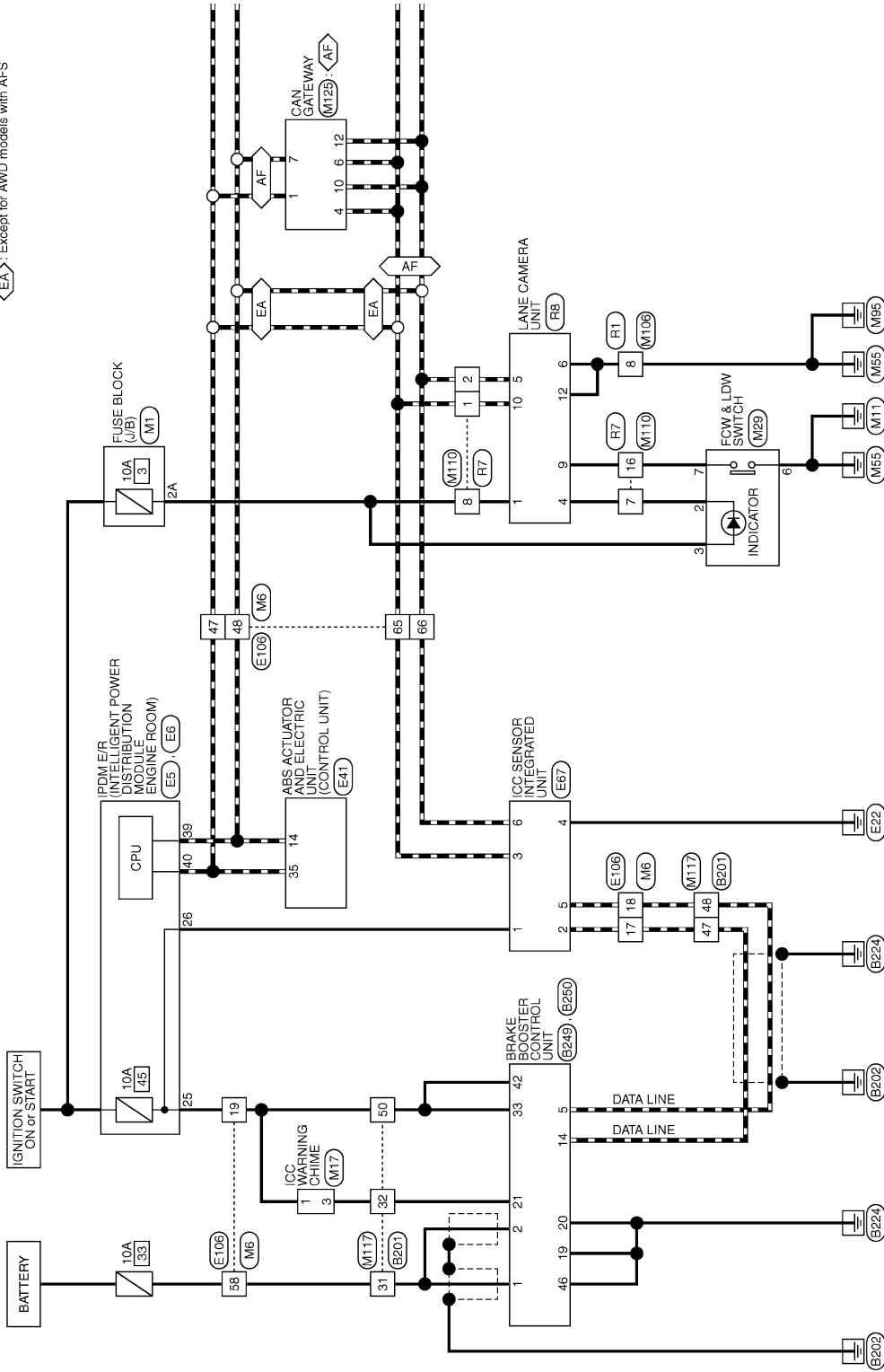
< ECU DIAGNOSIS INFORMATION >

Wiring Diagram - FORWARD COLLISION WARNING -

INFOID:000000004024980

FORWARD COLLISION WARNING

◊AF◊ : AWD models with AFS
 ◊EA◊ : Except for AWD models with AFS



2008/03/04

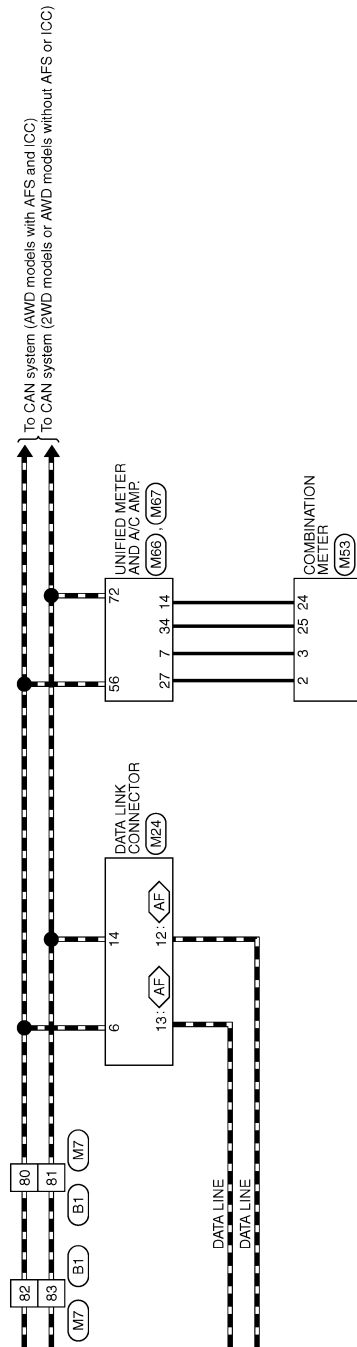
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ICC SENSOR INTEGRATED UNIT

◁AF▷ : AWD models with AFS



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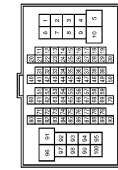
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

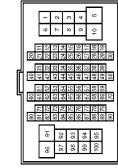
FORWARD COLLISION WARNING

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH20FW-CS12-M4



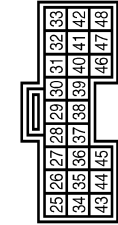
Terminal No.	Color of Wire	Signal Name [Specification]
80	L	-
81	P	-
82	L	-
83	P	-

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



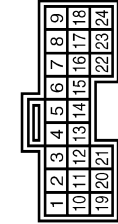
Terminal No.	Color of Wire	Signal Name [Specification]
31	W	-
32	GR	-
47	L	- [With IGC]
48	P	- [With IGC]
50	G	- [With IGC]

Connector No.	B249
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FGY



Terminal No.	Color of Wire	Signal Name [Specification]
33	G	IGNITION
42	G	IGNITION
46	B	GND

Connector No.	B250
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FW



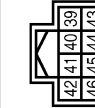
Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BATTERY
2	W	BATTERY
5	P	ITS COMM-L
14	L	ITS COMM-H
19	B	GND
20	B	GND
21	GR	CHIME SIGNAL

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-TV



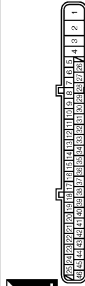
Terminal No.	Color of Wire	Signal Name [Specification]
26	R	-
25	G	-

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH80FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	-
40	L	-

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	BAA4ZF7B-AH24-LH



Terminal No.	Color of Wire	Signal Name [Specification]
14	P	CAN-L
35	L	CAN-H

Connector No.	E67
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	RS08FB-PR



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	IGNITION
2	L	ITS COMM-H
3	G	CAN-H
4	B	GND
5	P	ITS COMM-L
6	BR	CAN-L

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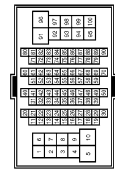
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

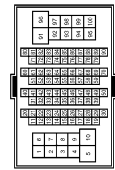
FORWARD COLLISION WARNING

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MM-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
80	L	-
81	P	-
82	L	-
83	P	-

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MM-CS16-TM4



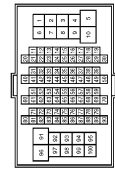
Terminal No.	Color of Wire	Signal Name [Specification]
17	L	-
18	P	-
19	G	-
47	L	-
48	P	-
58	O	-
65	L	-
66	P	-

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



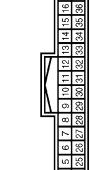
Terminal No.	Color of Wire	Signal Name [Specification]
2A	G	-

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
17	L	-
18	P	-
19	G	-
47	L	-
48	P	-
58	O	-
65	G	-
66	BR	-

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



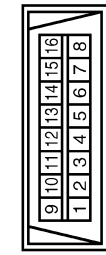
Terminal No.	Color of Wire	Signal Name [Specification]
2	LG	COMM (METER->AMP.)
3	GR	COMM (AMP->METER)
24	BR	COMM (LCD->AMP.)
25	Y	COMM (AMP->LCD)

Connector No.	M29
Connector Name	FCW & LDW SWITCH
Connector Type	TK08FW



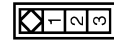
Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	-
3	Y	-
6	B	-
7	V	-

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
12	P	-
13	L	-
14	P	-

Connector No.	M17
Connector Name	ICC WARNING CHIME
Connector Type	A03FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
3	W	-

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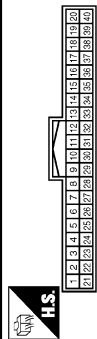
ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

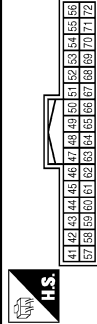
FORWARD COLLISION WARNING

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH40FW-NH



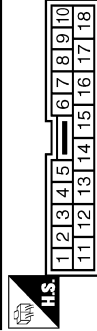
Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	COMM (AMP->METER)
14	BR	COMM (LCD->AMP)
27	LG	COMM (METER->AMP)
34	Y	COMM (AMP->LCD)

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH42FW-NH



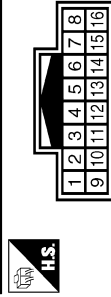
Terminal No.	Color of Wire	Signal Name [Specification]
56	L	CAN-H
72	P	CAN-L

Connector No.	M106
Connector Name	WIRE TO WIRE
Connector Type	TK10MF-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
8	B	-

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Type	TH18MF-NH



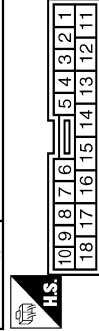
Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	P	-
7	SB	-
8	LG	-
16	V	-

Connector No.	M17
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS18-TM4



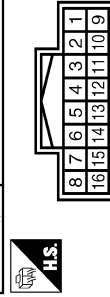
Terminal No.	Color of Wire	Signal Name [Specification]
31	W	-
32	W	-
47	L	- [With ICC]
48	P	- [With ICC]
50	G	- [With ICC]

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
8	B	-

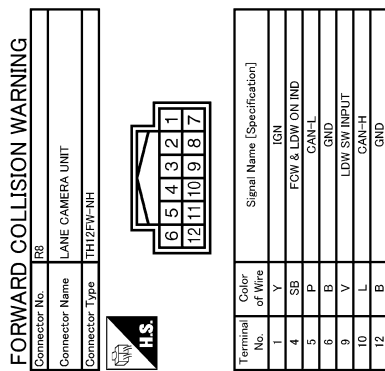
Connector No.	R7
Connector Name	WIRE TO WIRE
Connector Type	TH18FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	P	-
7	SB	-
8	Y	-
16	V	-

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INFOID:000000004024981

Fail-Safe

If a malfunction occurs in the system, a chime sounds a beep, and ICC sensor integrated unit cancels the control. Then the ICC system warning lamp in the combination meter illuminates.

DTC Inspection Priority Chart

INFOID:000000004024982

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

Priority	Detected items (DTC)	
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN) 	A
2	<ul style="list-style-type: none"> • C1A31: BCU INTERNAL MALF • C1F02: APA C/U MALF 	B
3	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A08: PRESS SEN CIRCUIT • C1A09: BOOSTER SOL/V CIRC • C1A10: RELEASE SW CIRC • C1A11: PRESSURE CONTROL • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A21: UNIT HIGH TEMP • C1A22: BCU CIRCUIT • C1A24: NP RANGE • C1A28: BCU PWR SUPPLY CIR • C1A29: BCU PWR SUPPLY CIR2 • C1A30: BCU CAN COMM CIRC • C1A32: IBA FLAG STUCK • C1A33: CAN TRANSMISSION ERROR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR2 • C1A38: APA CAN CIR1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR • U0121: VDC CAN CIR2 • U0126: STRG SEN CAN CIR1 • U0129: BCU CAN CIR2 • U0401: ECM CAN CIR1 • U0402: TCM CAN CIR1 • U0415: VDC CAN CIR1 • U0418: BCU CAN CIR1 • U0428: STRG SEN CAN CIR2 	C D E F G H I J K L
4	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIRC 	M
5	<ul style="list-style-type: none"> • C1A15: GEAR POSITION 	
6	<ul style="list-style-type: none"> • C1A00: CONTROL UNIT 	N

DTC Index

INFOID:000000004109484

NOTE:

- The details of time display are as per the following.
 - CRNT: A malfunction is detected now
 - PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
 - 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
 - 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
 - If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)

CCS

P

ICC SENSOR INTEGRATED UNIT

[FCW]

< ECU DIAGNOSIS INFORMATION >

- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

NOTE:

IBA system automatically returns to ON, when erasing self diagnosis result.

×: Applicable

DTC		CONSULT-III display	ICC sys-tem warning lamp	Fail-safe function			Reference
CONSULT-III	On board display			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	IBA system	
C1A00	0	CONTROL UNIT	×	×	×	×	CCS-52
C1A01	1	POWER SUPPLY CIR	×	×	×	×	CCS-54
C1A02	2	POWER SUPPLY CIR 2	×	×	×	×	CCS-54
C1A03	3	VHCL SPEED SE CIRC	×	×	×	×	CCS-56
C1A04	4	ABS/TCS/VDC CIRC	×	×	×	×	CCS-58
C1A05	5	BRAKE SW/STOP L SW	×	×	×	×	CCS-60
C1A06	6	OPERATION SW CIRC	×	×	×		CCS-65
C1A08	8	PRESS SEN CIRCUIT	×	×	×	×	CCS-68
C1A09	9	BOOSTER SOL/V CIRC	×	×	×	×	CCS-70
C1A10	10	RELEASE SW CIRC	×	×	×	×	CCS-73
C1A11	11	PRESSURE CONTROL	×	×	×	×	CCS-76
C1A12	12	LASER BEAM OFFCNTR	×	×		×	CCS-79
C1A13	13	STOP LAMP RLY FIX	×	×		×	CCS-80
C1A14	14	ECM CIRCUIT	×	×	×		CCS-87
C1A15	15	GEAR POSITION	×	×	×	×	CCS-89
C1A16	16	RADAR STAIN	×	×		×	CCS-92
C1A18	18	LASER AIMING INCOMP	×	×		×	CCS-94
C1A21	21	UNIT HIGH TEMP	×	×	×	×	CCS-96
C1A22	22	BCU CIRCUIT	×	×	×	×	CCS-98
C1A24	24	NP RANGE	×	×	×	×	CCS-102
C1A28	28	BCU PWR SUPPLY CIR	×	×	×	×	CCS-104
C1A29	29	BCU PWR SUPPLY CIR2	×	×	×	×	CCS-104
C1A30	30	BCU CAN COMM CIRC	×	×	×	×	CCS-106
C1A31	31	BCU INTERNAL MALF	×	×	×	×	CCS-107
C1A32	32	IBA FLAG STUCK	×	×	×	×	CCS-109
C1A33	33	CAN TRANSMISSION ERROR	×	×	×	×	CCS-111
C1A34	34	COMMAND ERROR	×	×	×	×	CCS-113
C1A35	35	APA CIR	×	×			CCS-266
C1A36	36	APA CAN COMM CIR	×	×			CCS-267
C1A37	133	APA CAN CIR2	×	×	×		CCS-269
C1A38	132	APA CAN CIR1	×	×	×		CCS-271
C1A39	39	STRG SEN CIR	×	×	×		CCS-115
C1A40	40	SYSTEM SW CIRC	×	×	×	×	CCS-117

ICC SENSOR INTEGRATED UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

DTC		CONSULT-III display	ICC system warning lamp	Fail-safe function			Reference
CONSULT-III	On board display			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	IBA system	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	—	—	—	—	—
C1F01	91	APA MOTOR MALF	×	×			CCS-279
C1F02	92	APA C/U MALF	×	×			CCS-281
C1F05	95	APA PWR SUPPLY CIR	×	×			CCS-284
U0121	127	VDC CAN CIR2	×	×	×	×	CCS-121
U0126	130	STRG SEN CAN CIR1	×	×	×		CCS-123
U0129	125	BCU CAN CIR2	×	×	×	×	CCS-125
U0401	120	ECM CAN CIR1	×	×	×	×	CCS-127
U0402	122	TCM CAN CIR1	×	×	×	×	CCS-129
U0415	126	VDC CAN CIR1	×	×	×	×	CCS-131
U0418	124	BCU CAN CIR1	×	×	×	×	CCS-133
U0428	131	STRG SEN CAN CIR2	×	×	×		CCS-135
U1000	100	CAN COMM CIRCUIT	×	×	×	×	CCS-137
U1010	110	CONTROL UNIT (CAN)	×	×	×	×	CCS-139

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LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

LANE CAMERA UNIT

Reference Value

INFOID:000000004024984

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item	Condition	Value/Status
LDW SW	LDW switch (FCW switch) is ON. (LDW ON indicator illuminates.)	On
	LDW switch (FCW switch) is OFF. (LDW ON indicator OFF.)	Off
LDW ON LAMP	LDW ON indicator (FCW ON indicator) illuminates.	On
	LDW ON indicator (FCW ON indicator) OFF	Off
LDP ON IND	LDP ON indicator lamp illuminates.	On
	LDP ON indicator lamp OFF	Off
LANE DPRT W/L	Lane departure warning lamp illuminates.	On
	Lane departure warning lamp OFF	Off
BUZZER OUTPUT	Lane departure warning buzzer is sounding.	On
	Lane departure warning buzzer is not sounding.	Off
LC INACCURAT	Lane camera malfunction	On
	Lane camera normal	Off
VHCL SPD SE	While driving	Approximately equivalent to speedometer reading
TURN SIGNAL	Turn signal lamp LH and RH blinking.	LH/RH
	Turn signal lamp LH blinking.	LH
	Turn signal lamp RH blinking.	RH
	Turn signal lamps OFF.	Off
LANE DETCT LH	Left side lane marker is detected.	On
	Left side lane marker is not detected.	Off
LANE DETCT RH	Right side lane marker is detected.	On
	Right side lane marker is not detected.	Off
CROSS LANE LH	The vehicle is crossing left side lane marker.	On
	The vehicle is not crossing left side lane marker.	Off
CROSS LANE RH	The vehicle is crossing right side lane marker.	On
	The vehicle is not crossing right side lane marker.	Off
WARN LANE LH	Warning for left side lane.	On
	Not warning for left side lane.	Off
WARN LANE RH	Warning for right side lane.	On
	Not warning for right side lane.	Off
VALID POS LH	Lateral position for left side lane marker is valid.	VLD
	Lateral position for left side lane marker is invalid.	INVLD
VALID POS RH	Lateral position for right side lane marker is valid.	VLD
	Lateral position for right side lane marker is invalid.	INVLD
AIMING DONE	Camera aiming is completed.	OK
	Camera aiming is not adjusted.	NG
AIMING RESULT	Camera aiming is completed.	OK
	Camera aiming is not completed.	NOK
XOFFSET	Camera aiming is completed.	Approx. 180 pixel

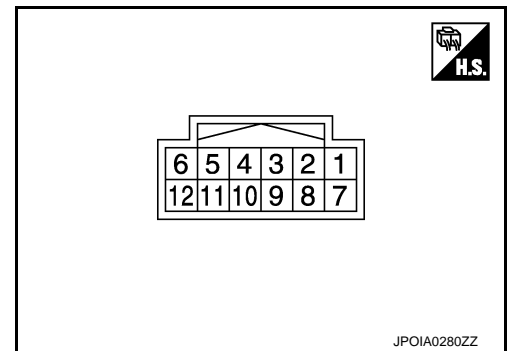
LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor Item	Condition	Value/Status
CHK AIM YAW	NOTE: The item is indicated, but not used.	—
CHK AIM ROLL	NOTE: The item is indicated, but not used.	—
CHK AIM PITCH	NOTE: The item is indicated, but not used.	—
FCTRY AIM YAW	Camera aiming is not completed.	+12.0 deg
	Camera aiming is completed.	0 ± 5.0 deg
FCTRY AIM ROL	Camera aiming is not completed.	0.0 deg
	Camera aiming is completed.	0 ± 5.0 deg
FCTRY AIM PIT	Camera aiming is not completed.	+12.0 deg
	Camera aiming is completed.	0 ± 5.0 deg

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (Y)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
3 (R)	Ground	Lane departure warning buzzer	Output	Lane departure warning buzzer	Sounding: 0 V Not sounding: 12 V
				LDW ON indicator	Output
4 (SB)	Ground	LDW ON indicator	Output		
5 (P)	Ground	CAN-L	—	—	—
6 (B)	Ground	Ground	—	—	0 V
9 (V)	Ground	LDW switch	Input	LDW switch	Pressed: 0 V Released: 5 V
					10 (L)
12 (B)	Ground	Ground	—	—	0 V

LANE CAMERA UNIT

[FCW]

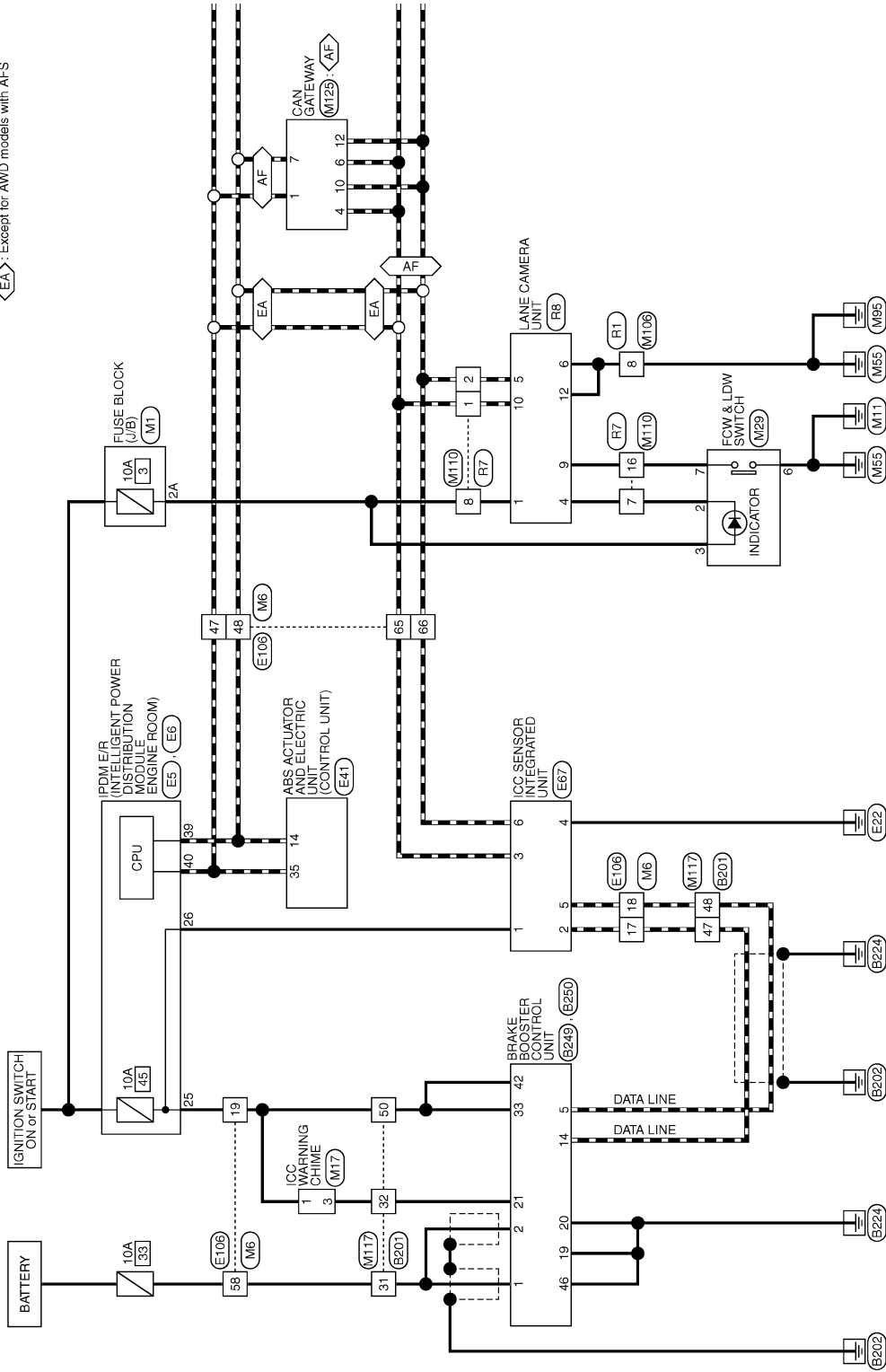
< ECU DIAGNOSIS INFORMATION >

Wiring Diagram - FORWARD COLLISION WARNING -

INFOID:000000004172893

FORWARD COLLISION WARNING

◁AF> : AWD models with AFS
 ◁EA> : Except for AWD models with AFS

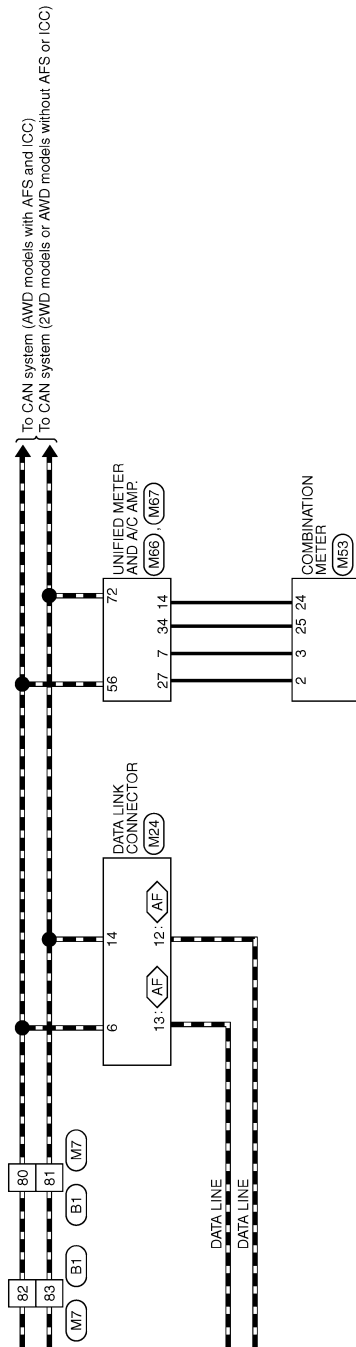


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LANE CAMERA UNIT

◁AF> : AWD models with AFS



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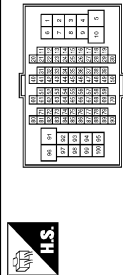
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LANE CAMERA UNIT

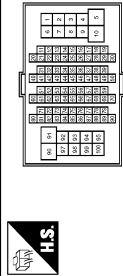
FORWARD COLLISION WARNING

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



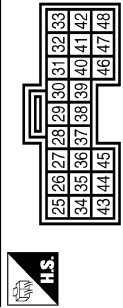
Terminal No.	Color of Wire	Signal Name [Specification]
80	L	-
81	P	-
82	L	- (With IGC)
83	P	- (With IGC)

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



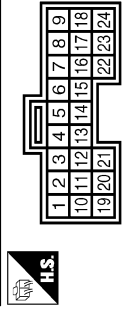
Terminal No.	Color of Wire	Signal Name [Specification]
31	W	-
32	GR	-
47	L	- (With IGC)
48	P	- (With IGC)
50	G	- (With IGC)

Connector No.	B249
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24EGY



Terminal No.	Color of Wire	Signal Name [Specification]
33	G	IGNITION
46	B	GND

Connector No.	B250
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FW



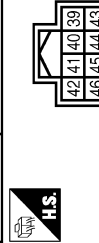
Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BATTERY
2	W	BATTERY
5	P	ITS COMM-L
14	L	ITS COMM-H
19	B	GND
20	B	GND
21	GR	CHIME SIGNAL

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-IV



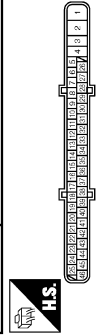
Terminal No.	Color of Wire	Signal Name [Specification]
26	R	-
25	G	-

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH80FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	-
40	L	-

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	BAA4ZF6-AH24-LH



Terminal No.	Color of Wire	Signal Name [Specification]
14	P	CAN-L
35	L	CAN-H

Connector No.	E67
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	RS08FB-PR



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	IGNITION
2	L	ITS COMM-H
3	G	CAN-H
4	B	GND
5	P	ITS COMM-L
6	BR	CAN-L

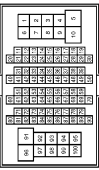

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LANE CAMERA UNIT



< ECU DIAGNOSIS INFORMATION >



[FCW]

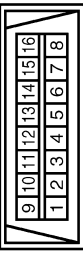

FORWARD COLLISION WARNING



Connector No. E106	Connector Name WIRE TO WIRE	Connector Type TH8DFW-CS16-TM4			
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
17	L	-	80	L	-
18	P	-	81	P	-
19	G	-	82	L	-
47	L	-	83	P	-
48	P	-			
58	O	-			
63	G	-			
66	BR	-			



Connector No. M7	Connector Name WIRE TO WIRE	Connector Type TH8DMF-CS16-TM4			
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
2	LG	COMM (METER->AMP.)	24	BR	COMM (LCD->AMP.)
3	GR	COMM (AMP->METER)	25	Y	COMM (AMP->LCD)

Connector No. M1	Connector Name FUSE BLOCK (J/B)	Connector Type NSGFFP-M2			
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
2A	G	-			

Connector No. M29	Connector Name FCW & LDW SWITCH	Connector Type TK08FGY			
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	-	6	B	-
3	Y	-	7	V	-

Connector No. M24	Connector Name DATA LINK CONNECTOR	Connector Type BD18FW			
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-	13	L	-
12	P	-	14	P	-
13	L	-			
14	P	-			

Connector No. M17	Connector Name ICC WARNING CHIME	Connector Type A03FW			
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-			
3	W	-			

Connector No. M53	Connector Name COMBINATION METER	Connector Type TH4DFW-NH			
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
2	LG	COMM (METER->AMP.)	24	BR	COMM (LCD->AMP.)
3	GR	COMM (AMP->METER)	25	Y	COMM (AMP->LCD)

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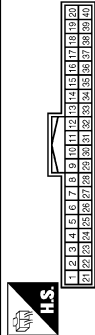


JCOWM0065GB

LANE CAMERA UNIT

FORWARD COLLISION WARNING

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH407V-NH



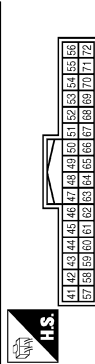
Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	COMM (AMP->METER)
14	BR	COMM (LGD->AMP)
27	LG	COMM (METER->AMP)
34	Y	COMM (AMP->LGD)

Connector No.	M17
Connector Name	WIRE TO WIRE
Connector Type	TH60WV-CS1(F)-TMA



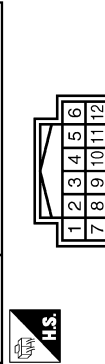
Terminal No.	Color of Wire	Signal Name [Specification]
31	W	-
32	W	-
47	L	- [With ICC]
48	P	- [With ICC]
50	G	- [With ICC]

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH432V-NH



Terminal No.	Color of Wire	Signal Name [Specification]
56	L	CAN-H
72	P	CAN-L

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH125V-NH



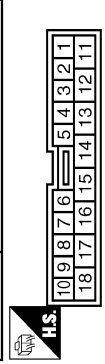
Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
4	L	CAN-H
6	L	CAN-H
7	P	CAN-L
10	P	CAN-L
12	P	CAN-L

Connector No.	M106
Connector Name	WIRE TO WIRE
Connector Type	TK10MVF-NS8



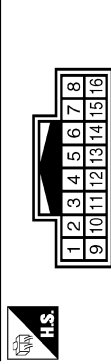
Terminal No.	Color of Wire	Signal Name [Specification]
8	B	-

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



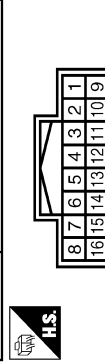
Terminal No.	Color of Wire	Signal Name [Specification]
8	B	-

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Type	TH16MVF-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	P	-
7	SB	-
8	LG	-
16	V	-

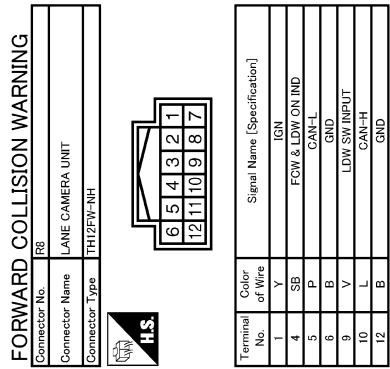
Connector No.	R7
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	P	-
7	SB	-
8	Y	-
16	V	-

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JCOWM0067GB

INFOID:000000004024986

Fail-safe

FAIL-SAFE CONTROL BY DTC

When any DTC is detected, the LDW/LDP systems do not operate.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

When using LDW

P

LANE CAMERA UNIT

[FCW]

< ECU DIAGNOSIS INFORMATION >

- If the vehicle is parked in direct sunlight under high temperature conditions [approximately over 104°F (40°C)] and then started, the system may sound a buzzer and cancel automatically. In this case LDW ON indicator will blink.
- When the interior temperature is reduced, LDW ON indicator is turned ON.

When using LDP

- If the vehicle is parked in direct sunlight under high temperature conditions [approximately over 104°F (40°C)] and then started, the system may sound a buzzer and cancel automatically. In this case LDP ON indicator lamp will blink.
- When the interior temperature is reduced, LDP ON indicator lamp is turned ON.

DTC Inspection Priority Chart

INFOID:000000004024987

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • U0122: VDC CAN CIR1(LDP) • U0416: VDC CAN CIR2(LDP)
3	C1B00: CAMERA UNIT MALF
4	<ul style="list-style-type: none"> • C1B01: CAM AIMING INCMP • C1B02: VHCL SPD DATA MALF • C1B03: ABNRML TEMP DETECT • C1B07: ABS DIAGNOSIS

DTC Index

INFOID:000000004024988

×: Applicable

DTC	Lane departure warning lamp	LDW ON indicator	LDP ON indicator lamp	Fail-safe	Reference page
C1B00	CAMERA UNIT MALF	ON	—	×	CCS-445
C1B01	CAM AIMING INCMP	Blink	—	×	CCS-446
C1B02	VHCL SPD DATA MALF	ON	—	×	CCS-447
C1B03	ABNRML TEMP DETECT	—	Blink (When using LDW)	×	CCS-448
C1B07	ABS DIAGNOSIS	ON	—	×	CCS-449
U1000	CAN COMM CIRCUIT	ON	—	×	CCS-450
U1010	CONTROL UNIT (CAN)	ON	—	×	CCS-451
U0122	VDC CAN CIR1 (LDP)	ON	—	×	CCS-452
U0416	VDC CAN CIR2 (LDP)	ON	—	×	CCS-454

FORWARD COLLISION WARNING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[FCW]

SYMPTOM DIAGNOSIS

FORWARD COLLISION WARNING SYSTEM SYMPTOMS

Symptom Table

INFOID:000000003902131

CAUTION:

Perform the self-diagnosis with CONSULT-III before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item/Reference page
FCW system is not activated.	FCW ON indicator is not turned ON ⇔ OFF when operating FCW switch.	<ul style="list-style-type: none">• Harness between lane camera unit and FCW switch.• Harness between FCW switch and ground.• Lane camera unit	FCW switch circuit CCS-408

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CCS

FCW SYSTEM IS NOT ACTIVATED

< SYMPTOM DIAGNOSIS >

[FCW]

FCW SYSTEM IS NOT ACTIVATED

Description

INFOID:000000003902132

FCW system does not operate by pressing the FCW switch.

NOTE:

FCW switch is shared with LDW system.

Diagnosis Procedure

INFOID:000000003902133

1. PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT-III.
2. Check if the DTC is detected in self-diagnosis results of "ICC" or "LANE CAMERA". Refer to [CCS-395](#), "[DTC Index](#)" (ICC) or [CCS-406](#), "[DTC Index](#)" (LANE CAMERA).

Is any DTC detected?

- YES >> GO TO 3.
NO >> GO TO 2.

2. CHECK FCW SWITCH CIRCUIT

Check FCW switch circuit. Refer to [CCS-469](#), "[Component Function Check](#)".

NOTE:

FCW switch is shared with LDW system.

Is the inspection result normal?

- YES >> Replace the lane camera unit.
NO >> GO TO 3.

3. REPAIR OR REPLACE THE SPECIFIC ITEMS

Repair or replace malfunctioning items.

>> INSPECTION END

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[FCW]

NORMAL OPERATING CONDITION

Description

INFOID:000000003902134

FORWARD COLLISION WARNING (FCW)

CAUTION:

- FCW system is intended to warn the driver before a collision but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- As there is a performance limit, the FCW system may not provide a warning in certain conditions.
- The FCW system will not detect the following objects.
 - Pedestrians, animals, or obstacles in the roadway.
 - On coming vehicles in the same lane
- FCW system will not detect under the following conditions.
 - When the sensor gets dirty, it is impossible to detect the distance from the vehicle ahead.
 - When driving into a strong light(i.e. sunlight)
- The sensor generally detects signals returned from the reflectors on a vehicle ahead. Therefore, the FCW system may not warn properly under the following conditions:
 - When the reflectors of the vehicle ahead are positioned high or close to each other (including a small vehicle such as motorcycles).
 - When the sensor gets dirty and it is impossible to detect the distance to the vehicle ahead.
 - When the reflectors on the vehicle ahead is missing, damaged or covered.
 - When the reflector of the vehicle ahead is covered with dirt, snow and road spray.
 - When visibility is low (such as rain, fog, snow, etc.).
 - When snow or road spray from traveling vehicles are splashed.
 - When dense exhaust or other smoke (black smoke) from vehicles reduces the sensor visibility.
 - When excessively heavy baggage is loaded in the rear seat or the luggage room of own vehicle.
 - When abruptly accelerating or decelerating.
 - On steep downhill or roads with sharp curves.
 - When there is a highly reflective object near the vehicle ahead.
 - i.e.) very close to other vehicle, signboard, etc.
 - When own vehicle are towing a trailer.
- Depending on certain road conditions (curved, beginning of a curve), vehicle conditions (steering position, vehicle position), or preceding vehicle's conditions (position in lane, etc.), the FCW system may not function properly. The FCW system may detect highly reflective objects such as reflectors, signs, white markers, and other stationary objects on the road or near the traveling lane, and provide unnecessary warning.
- The FCW system may not function in offset conditions.
- The FCW system may not function when the distance to the vehicle ahead is extremely close.
- The FCW system is designed to automatically check the sensor's functionality. If the sensor is covered with ice, a transparent or translucent plastic bag, etc., the system may not detect them. In these instances the FCW system may not be able to warn properly. Be sure to check and clean the sensor regularly.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- A sudden appearance of the vehicle in front (i.e.: when a vehicle abruptly cuts in) may not be detected and the system may not warn soon enough.
- The FCW system will be canceled automatically with a chime sound and the IBA OFF indicator light will illuminate under the following conditions:
 - When the sensor window is dirty
 - When the FCW system malfunctions

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CCS

PRECAUTION

PRECAUTIONS

Precaution for FCW System Service

INFOID:000000003902136

CAUTION:

- Never look straight into the laser beam discharger when adjusting laser beam aiming.
- Turn the FCW switch OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Never use the ICC sensor integrated unit removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of ICC system, then check the operation of ICC system after adjusting laser beam aiming if necessary.
- Never change FCW initial state ON ⇒ OFF without the consent of the customer.

REMOVAL AND INSTALLATION

FCW SWITCH

Exploded View

INFOID:000000003902139

Refer to [CCS-502, "Exploded View"](#).

NOTE:

FCW switch is shared with LDW system.

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[LDW & LDP]

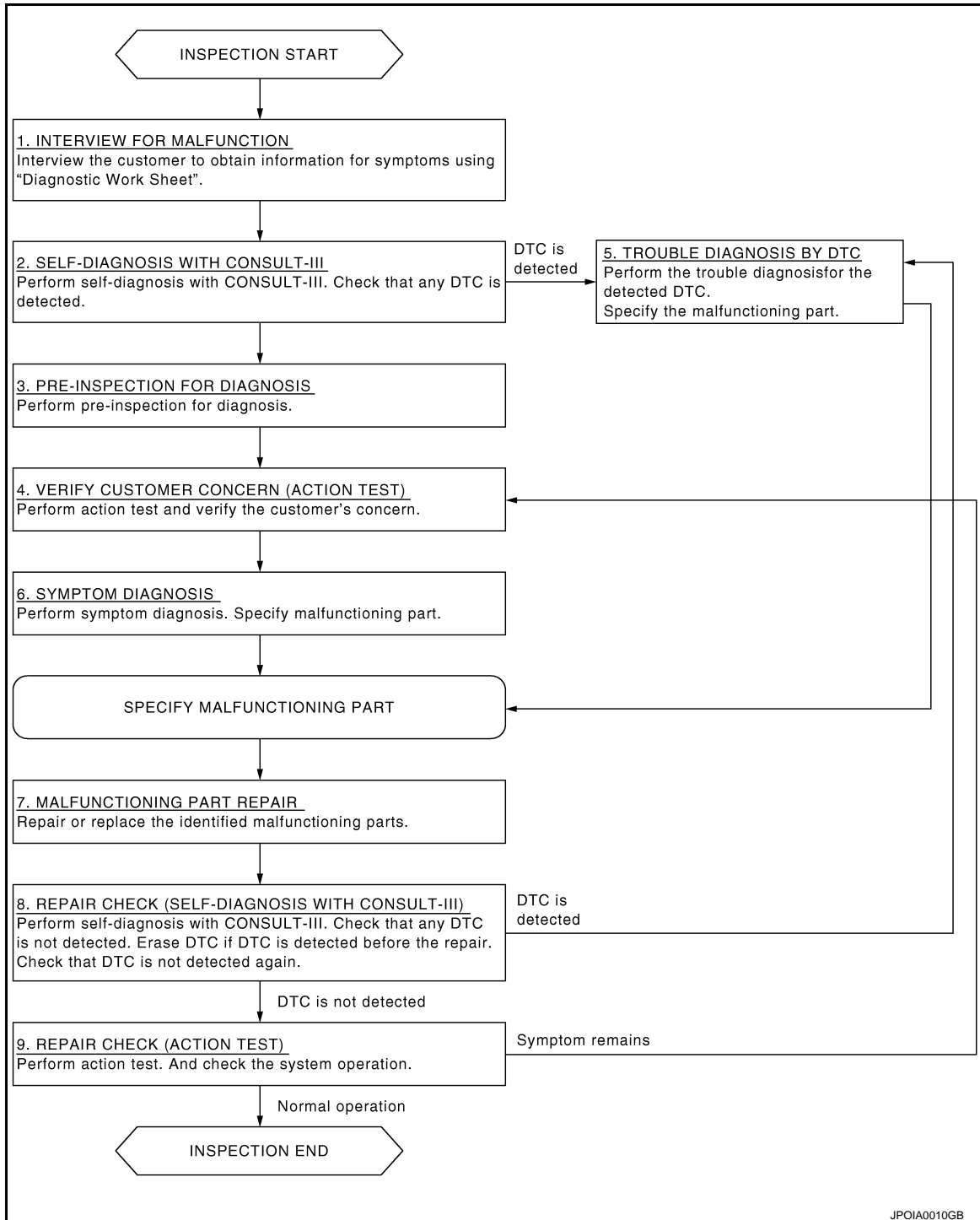
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000003867039

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

Interview the customer to obtain information about symptoms using "Diagnostic Work Sheet". (Refer to [CCS-413, "Diagnostic Work Sheet"](#).)

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[LDW & LDP]

>> GO TO 2.

2. SELF-DIAGNOSIS WITH CONSULT-III

Perform self-diagnosis with CONSULT-III. Check if any DTC is detected.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 3.

3. PRE-INSPECTION FOR DIAGNOSIS

Perform pre-inspection for diagnosis. Refer to [CCS-415, "Inspection Procedure"](#).

>> GO TO 4.

4. VERIFY CUSTOMER CONCERN (ACTION TEST)

Perform action test and verify the customer's information. Refer to [CCS-416, "Description"](#).

>> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

Perform trouble diagnosis for the detected DTC. Specify a malfunctioning part. Refer to [CCS-483, "DTC Index"](#) (Lane camera unit) and/or [CCS-494, "DTC Index"](#) [ABS actuator and electric unit (control unit)].

>> GO TO 7.

6. SYMPTOM DIAGNOSIS

Perform symptom diagnosis. Specify malfunctioning part. Refer to [CCS-496, "Symptom Table"](#).

>> GO TO 7.

7. MALFUNCTION PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 8.

8. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

Perform self-diagnosis with CONSULT-III. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 9.

9. REPAIR CHECK (ACTION TEST)

Perform action test. Also check the system operation.

Does it operate normally?

YES >> INSPECTION END

NO >> GO TO 4.

Diagnostic Work Sheet

INFOID:000000003867040

DESCRIPTION

In general, each customer feels differently about an incident. It is important to fully understand the symptoms or conditions for a customer complaint.

There are many operating conditions that lead to the malfunction. A good grasp of such conditions can make troubleshooting faster and more accurate.

Some conditions may cause the lane departure warning lamp to stay ON.

Utilize a work sheet sample to organize all of the information for troubleshooting.

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[LDW & LDP]

KEY POINTS

- WHAT..... System and functions
- WHEN..... Date, Frequencies
- WHERE..... Road conditions
- HOW..... Operating conditions, Symptoms

WORK SHEET SAMPLE

Customer name MR/MS		Model and Year		VIN	
Engine #		Trans.		Mileage	
Incident Date		Manuf. Date		In Service Date	
Symptoms					
Indicator/Warning lamps	<input type="checkbox"/> Lane departure warning lamp	<input type="checkbox"/> Stays ON <input type="checkbox"/> Turned ON occasionally	<input type="checkbox"/> Stays OFF <input type="checkbox"/> Others ()	<input type="checkbox"/> Blinks	
	<input type="checkbox"/> LDW ON indicator	<input type="checkbox"/> Stays ON	<input type="checkbox"/> Stays OFF <input type="checkbox"/> Others ()	<input type="checkbox"/> Blinks	
	<input type="checkbox"/> LDP ON indicator lamp	<input type="checkbox"/> Stays ON <input type="checkbox"/> Turned ON occasionally	<input type="checkbox"/> Stays OFF <input type="checkbox"/> Others ()	<input type="checkbox"/> Blinks	
	<input type="checkbox"/> Other lamps ()	<input type="checkbox"/> Stays ON <input type="checkbox"/> Turned ON occasionally	<input type="checkbox"/> Stays OFF <input type="checkbox"/> Others ()	<input type="checkbox"/> Blinks	
Functions	<input type="checkbox"/> When using LDW <input type="checkbox"/> When using LDP				
	<input type="checkbox"/> All functions do not operate. <input type="checkbox"/> Warning function does not operate. (<input type="checkbox"/> No sound <input type="checkbox"/> No indicator) <input type="checkbox"/> Yawing function does not operate. (Warning function is operated.)				
	<input type="checkbox"/> Functions when changing the course in the turn signal direction. <input type="checkbox"/> Functions are untimely. <ul style="list-style-type: none"> <input type="checkbox"/> Does not function when driving on lane markers. <input type="checkbox"/> Functions when driving in a lane. <input type="checkbox"/> Functions in a different position from the actual position. <input type="checkbox"/> Others ()				
Conditions					
Frequency	<input type="checkbox"/> Continuously		<input type="checkbox"/> Intermittently		
Light conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> In the daytime <input type="checkbox"/> Direct light	<input type="checkbox"/> At night <input type="checkbox"/> Backlight	<input type="checkbox"/> Sunrise/sunset (Strong light) <input type="checkbox"/> Others ()		
Driving conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> Vehicle speed	MPH (km/h)	<input type="checkbox"/> Vehicle is stopped		
Weather conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> Fine <input type="checkbox"/> Clouding	<input type="checkbox"/> Raining	<input type="checkbox"/> Snowing <input type="checkbox"/> Others ()		
Road conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> Highway <input type="checkbox"/> Uneven roads	<input type="checkbox"/> In town <input type="checkbox"/> Winding roads	<input type="checkbox"/> Others ()		
Lane maker conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> Clear	<input type="checkbox"/> Unclear	<input type="checkbox"/> Others ()		
Other conditions					

JPOIA0203GB

PRE-INSPECTION FOR DIAGNOSIS

< BASIC INSPECTION >

[LDW & LDP]

PRE-INSPECTION FOR DIAGNOSIS

Inspection Procedure

INFOID:000000003867041

1.CHECK CAMERA LENS AND WINDSHIELD

Are camera lens and windshield contaminated with foreign materials?

YES >> Clean camera lens and windshield.

NO >> GO TO 2.

2.CHECK LANE CAMERA UNIT INSTALLATION CONDITION

Check lane camera unit installation condition (installation position, properly tightened, a bent bracket).

Is it properly installed?

YES >> GO TO 3.

NO >> Install lane camera unit properly, and perform camera aiming. Refer to [CCS-418, "CAMERA AIMING ADJUSTMENT : Description"](#).

3.CHECK VEHICLE HEIGHT

Check vehicle height. Refer to [FSU-20, "Wheel Height"](#) (2WD) or [FSU-40, "Wheel Height"](#) (AWD).

Is vehicle height appropriate?

YES >> INSPECTION END

NO >> Repair vehicle to appropriate height.

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ACTION TEST

< BASIC INSPECTION >

[LDW & LDP]

ACTION TEST

Description

INFOID:000000003867042

- Perform action test to verify the customer's concern.
- Perform action test and check the system operation after system diagnosis.

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

- Fully understand the following items well before the road test;
 - Precautions: Refer to [CCS-500, "Precaution for LDW/LDP System Service"](#).
 - System description for LDW: Refer to [CCS-423, "System Description"](#).
 - System description for LDP: Refer to [CCS-428, "System Description"](#).
 - Normal operating condition: Refer to [CCS-498, "Description"](#).

Inspection Procedure

INFOID:000000003867043

WARNING:

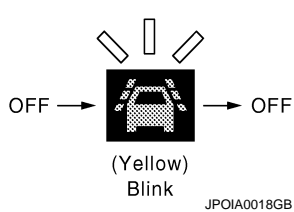
Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

- Fully understand the following items well before the road test;
 - Precautions: Refer to [CCS-500, "Precaution for LDW/LDP System Service"](#).
 - System description for LDW: Refer to [CCS-423, "System Description"](#).
 - System description for LDP: Refer to [CCS-428, "System Description"](#).
 - Normal operating condition: Refer to [CCS-498, "Description"](#).

1. ACTION TEST FOR LDW

1. Drive the vehicle.
2. Turn LDW switch ON (LDW ON indicator is ON).
 - NOTE:**
LDP system is OFF.
3. Check the LDW operation according to the following table.

Input		Output			
Vehicle speed [km/h (MPH)]	Vehicle condition/ Driver's operation	Action	LDW ON indicator	Indication on the combination meter	Buzzer
Less than 64 (40)	Close to lane marker	No action	ON	OFF	—
72 (45) or more	Close to lane marker	Warning <ul style="list-style-type: none"> • Buzzer sounds • Warning lamp blinks 	ON		Short continuous beeps
	<ul style="list-style-type: none"> • Close to lane marker • Turn signal ON (Deviate side) 	No action	ON	OFF	—

>> GO TO 2.


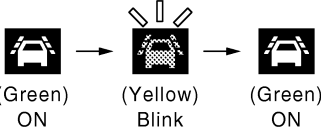

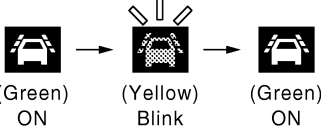
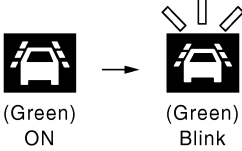
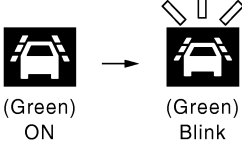
2. ACTION TEST FOR LDP

1. Turn LDP ON switch ON (LDP ON indicator lamp is ON).
 - NOTE:**
LDW system is OFF.
2. Check the LDP operation according to the following table.

ACTION TEST

< BASIC INSPECTION >

[LDW & LDP]

Input		Output		
Vehicle speed [km/h (MPH)]	Vehicle condition/ Driver's operation	Action	Indication on the combination meter	Buzzer
Less than 64 (40)	Close to lane marker	No action	 (Green) ON <small>JPOIA0021GB</small>	—
	Close to lane marker	Warning and yawing • Buzzer sounds • Warning lamp blinks • Brake control	 (Green) ON (Yellow) Blink (Green) ON <small>JPOIA0022GB</small>	Short continuous beeps
72 (45) or more	<ul style="list-style-type: none"> • Close to lane marker • Turn signal ON (Deviate side) 	No action	 (Green) ON <small>JPOIA0021GB</small>	—
	Close to lane marker with soft braking	Warning • Buzzer sounds • Warning lamp blinks	 (Green) ON (Yellow) Blink (Green) ON <small>JPOIA0022GB</small>	Short continuous beeps
	VDC OFF switch: OFF ⇒ ON	Cancellation • Buzzer sounds • Indicator lamp blinks NOTE: When LDP ON switch is ON ⇒ OFF, indicator lamp is turned OFF.	 (Green) ON (Green) Blink <small>JPOIA0023GB</small>	Beep
	Snow mode switch: OFF ⇒ ON (If equipped)	Cancellation • Buzzer sounds • Indicator lamp blinks NOTE: When LDP ON switch is ON ⇒ OFF, indicator lamp is turned OFF.	 (Green) ON (Green) Blink <small>JPOIA0023GB</small>	Beep

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>> WORK END

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (LANE CAMERA UNIT)

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (LANE CAMERA UNIT) : Description

INFOID:000000003867044

Always perform the camera aiming adjustment after replacing the lane camera unit.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (LANE CAMERA UNIT) : Special Repair Requirement

INFOID:000000003867045

1. CAMERA AIMING ADJUSTMENT

Perform the camera aiming adjustment with CONSULT-III. Refer to [CCS-418, "CAMERA AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. PERFORM SELF-DIAGNOSIS

Perform the self-diagnosis of lane camera unit with CONSULT-III. Check if any DTC is detected.

Is any DTC detected?

YES >> Perform the trouble diagnosis for the detected DTC. Refer to [CCS-483, "DTC Index"](#).

NO >> GO TO 3.

3. LDW/LDP SYSTEM ACTION TEST

1. Perform the LDW/LDP system action test. Refer to [CCS-416, "Description"](#).

2. Check that the LDW/LDP system operates normally.

>> WORK END

CAMERA AIMING ADJUSTMENT

CAMERA AIMING ADJUSTMENT : Description

INFOID:000000003867046

OUTLINE

Perform the camera aiming every time the lane camera unit is removed and installed.

CAUTION:

- Place the vehicle on level ground when the camera aiming adjustment is operated.
- Follow the CONSULT-III when performing the camera aiming. (Camera aiming adjustment cannot be operated without CONSULT-III.)

CAMERA AIMING ADJUSTMENT : Special Repair Requirement (Preparation)

INFOID:000000003867047

1. PERFORM SELF-DIAGNOSIS

Perform self-diagnosis of lane camera unit.

Is any DTC detected?

Except "C1B01">>Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to [CCS-483, "DTC Index"](#).

"C1B01" or no DTC>>GO TO 2.

2. PREPARATION BEFORE CAMERA AIMING ADJUSTMENT

1. Adjust the tire pressure to the specified pressure value.
2. Maintain no-load in vehicle.
3. Check if coolant and Engine oil are filled up to correct level and fuel tank is full.
4. Shift the selector lever to "P" position and release the parking brake.
5. Clean the windshield.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]

6. Completely clear off the instrument panel.

>> GO TO 3.

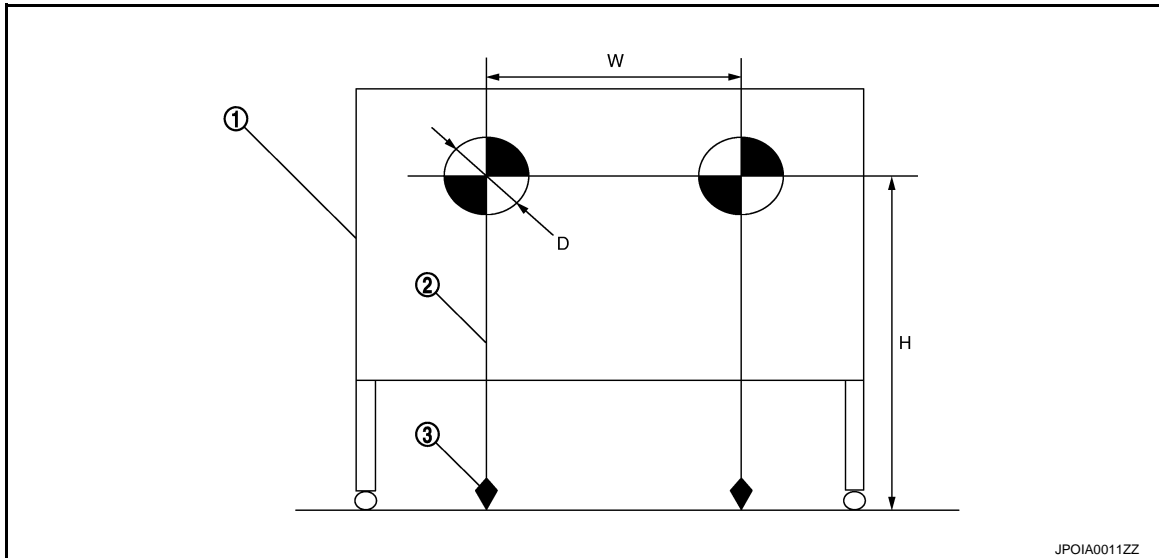
3. PREPARATION OF AIMING ADJUSTMENT JIG

Prepare the aiming adjustment jig according to the following procedure and the figure.

1. Print out the target mark attached in this SM. Refer to [CCS-422, "CAMERA AIMING ADJUSTMENT : Special Repair Requirement \(Target Mark Sample\)"](#).
2. Stick a printed target mark on the board with a scotch tape or a piece of double-sided tape.

NOTE:

- Use the board that peripheral area of the target is monochrome such as a white-board.
- Notice that the cross of the target is horizontal and vertical.



1. Board
2. String
3. Cone

 : Target mark

Diameter of a target (D) : 200 mm (7.87 in)
Height of a target center (H) : 1450 mm (57.09 in)
Width between a right target center from a left target center (W) : 600 mm (23.62 in)

>> Go to [CCS-419, "CAMERA AIMING ADJUSTMENT : Special Repair Requirement \(Target Setting\)"](#).

CAMERA AIMING ADJUSTMENT : Special Repair Requirement (Target Setting)

INFOID:000000003867048

CAUTION:

- Perform this operation in a horizontal position where there is a clear view for 5 m (16.4 ft) forward and 3 m (9.84 ft) wide.
- Place the target in a well-lighted location. (Poor lighting may make it hard to adjust.)
- The target may not be detected when there is a light source within 1.5 m (4.92 ft) from either side and within 1 m (3.28 ft) upward/downward from the target.
- Check the location of the sun. (Sunlight should not shine directly on the front of the vehicle.)
- The target may not be detected when there is the same pattern of black and white as the target when the pattern is within 1 m (3.28 ft) from either side and upward/downward position from the target. (It is desirable that the vehicle is positioned on the opposite side of a single-color wall.)

1. TARGET SETTING

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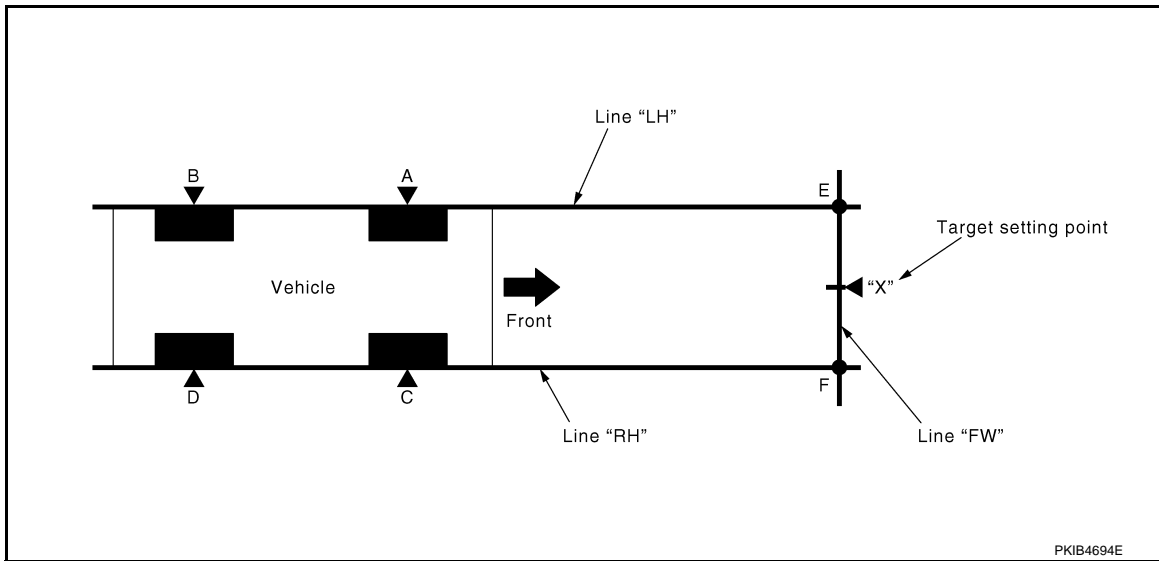
CCS

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]



“A” – “E” (“C” – “F”) : 3850 mm (151.57 in)

1. Mark points “A”, “B”, “C” and “D” at the center of the lateral surface of each wheels.

NOTE:

Hang a string with a cone from the fender so as to pass through the center of wheel, and then mark a point at the center of the lateral surface of the wheel.

2. Draw line “LH” passing through points “A” and “B” on the left side of vehicle.

NOTE:

Approximately 4 m (13.12 ft) or more from the front end of vehicle.

3. Mark point “E” on the line “LH” at the positions 3850 mm (151.57 in) from point “A”.

4. Draw line “RH” passing through points “C” and “D” on the right side of vehicle in the same way as step 2.

NOTE:

Approximately 4 m (13.12 ft) or more from the front end of vehicle.

5. Mark point “F” on the line “RH” at the positions 3850 mm (151.57 in) from point “C”.

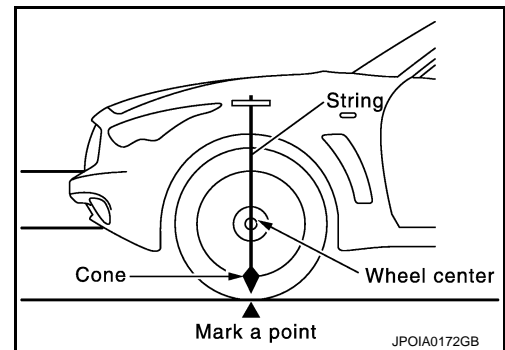
6. Draw line “FW” passing through the points “E” and “F” on the front side of vehicle.

7. Mark point “X” at the center of point “E” and “F” on the line “FW”.

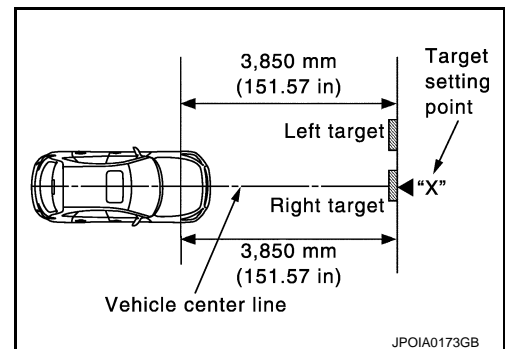
CAUTION:

Make sure that “E” to “X” is equal to “F” to “X”.

8. Position the center of the right target to point of “X”.



>> Go to [CCS-420. "CAMERA AIMING ADJUSTMENT : Special Repair Requirement \(Camera Aiming Adjustment\)"](#).



CAMERA AIMING ADJUSTMENT : Special Repair Requirement (Camera Aiming Adjustment)

INFOID:000000003867049

CAUTION:

Perform the adjustment under unloaded vehicle condition.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]

1. CHECK VEHICLE HEIGHT

Measure the wheelarch height. Calculate "Dh".

$$Dh [mm] = (Hfl + Hfr) \div 2 - 831$$

where,

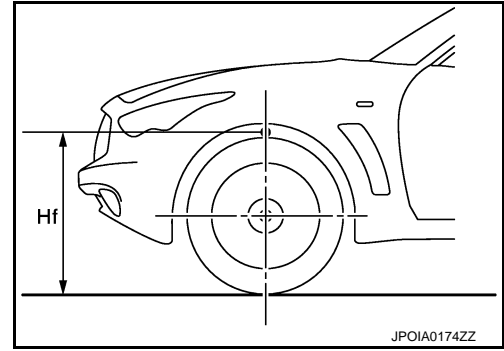
Hfl: Front left wheelarch height [mm]

Hfr: Front right wheelarch height [mm]

NOTE:

"Dh" may be calculated as a minus value.

>> GO TO 2.



2. CAMERA AIMING ADJUSTMENT

CONSULT-III WORK SUPPORT

CAUTION:

Operate CONSULT-III outside the vehicle, and close all the doors. (To retain vehicle attitude appropriately)

1. Select "Work Support" on "LANE CAMERA" with CONSULT-III.
2. Select "AUTO AIM".
3. Confirm the following items;
 - The target should be accurately placed.
 - The vehicle should be stopped.
4. Select "Start" to perform camera aiming.

CAUTION:

Never select "Start" when the target is not accurately placed.

5. Input "Dh", and then select "Start".

CAUTION:

Never change "Ht" and "Dt".

6. Confirm the displayed item.
 - "Normally Completed": Select "Completion".
 - "SUSPENSION" or "ABNORMALLY COMPLETED": Perform the following services.

Displayed item		Service procedure
SUSPENSION	00H Routine not activated	Position the target appropriately again. Perform the aiming again. Refer to CCS-419. "CAMERA AIMING ADJUSTMENT : Special Repair Requirement (Target Setting)".
	10H Writing error	
ABNORMALLY COMPLETED	—	

NOTE:

Replace camera unit if "SUSPENSION" is repeatedly indicated during the above two services are performed.

7. Confirm that "Normally Completed" is displayed and then select "End" to close the aiming adjustment procedure.

>> GO TO 3.

3. PERFORM SELF-DIAGNOSIS

Perform self-diagnosis of lane camera unit with CONSULT-III.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to [CCS-483. "DTC Index".](#)

NO >> GO TO 4.

4. ACTION TEST

Test the LDW/LDP system operation by action test. Refer to [CCS-416. "Description".](#)

>> WORK END

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

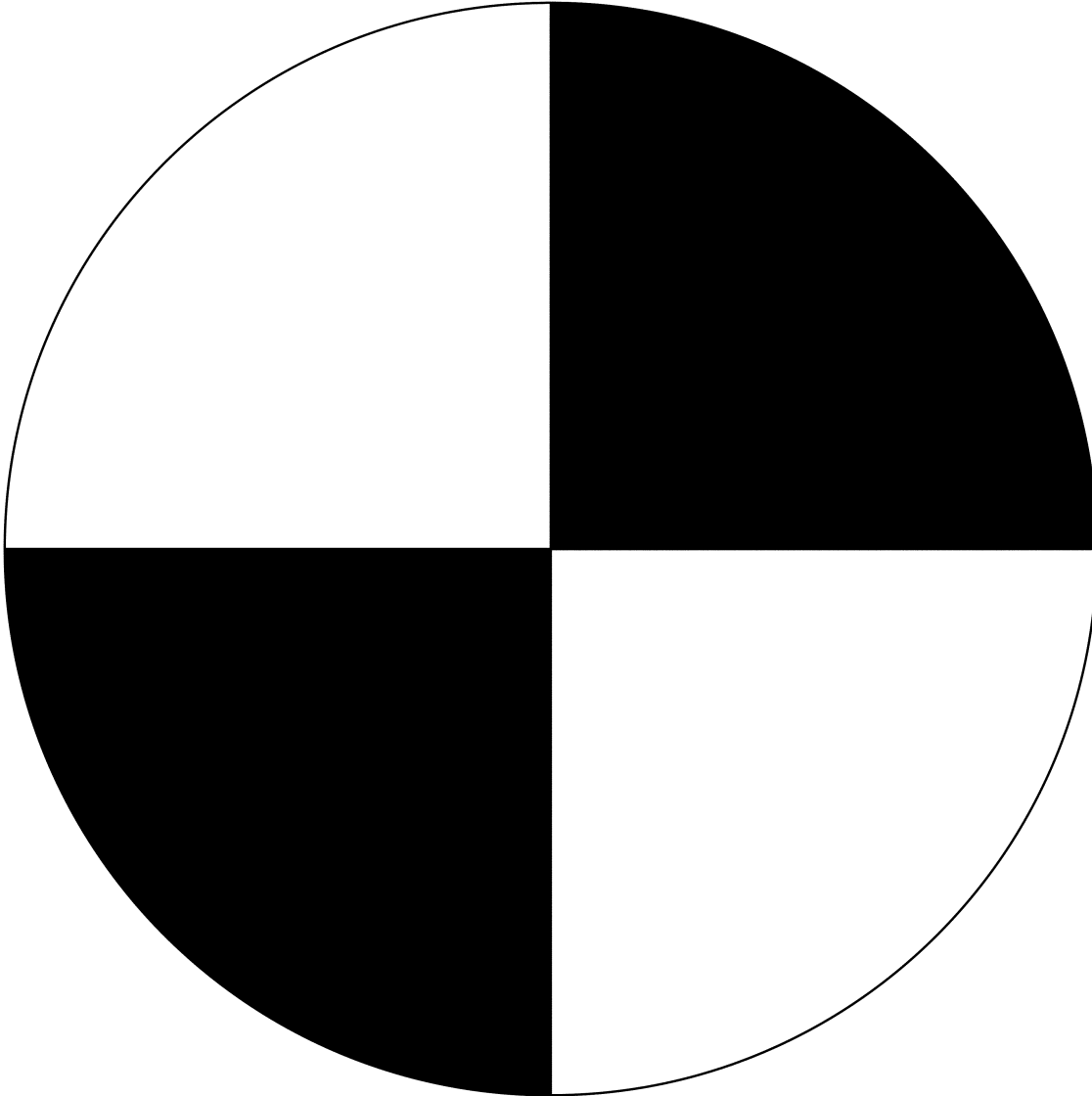
[LDW & LDP]

CAMERA AIMING ADJUSTMENT : Special Repair Requirement (Target Mark Sample)

INFOID:000000003867050

NOTE:

Print this illustration so that the diameter of the circle is 200 mm (7.87 in).



PGIA0105J

LANE DEPARTURE WARNING (LDW) SYSTEM

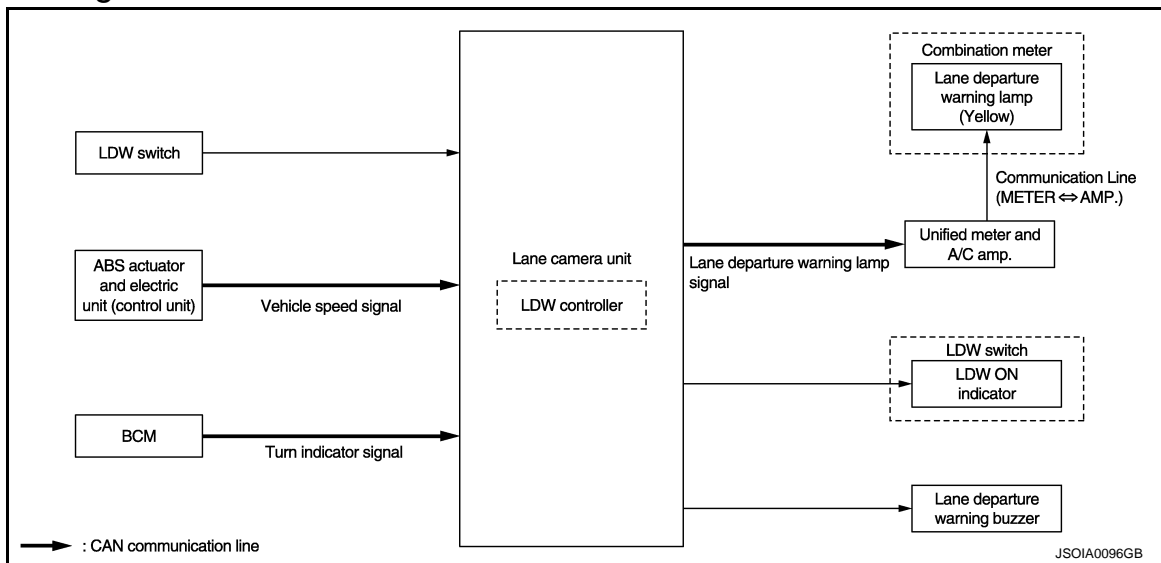
< SYSTEM DESCRIPTION >

[LDW & LDP]

SYSTEM DESCRIPTION

LANE DEPARTURE WARNING (LDW) SYSTEM

System Diagram

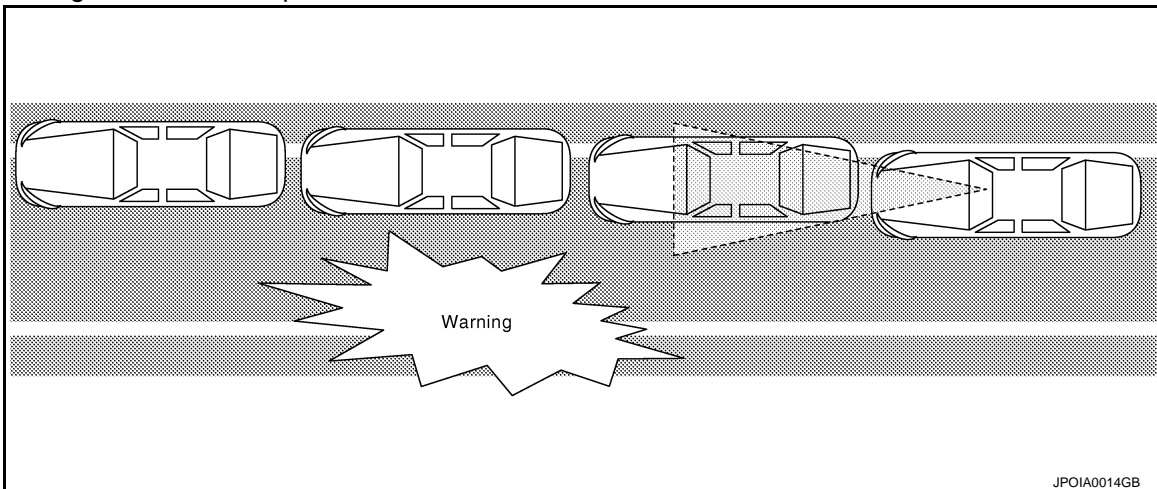


System Description

INFOID:000000003867052

OUTLINE

- Lane Departure Warning (LDW) system provides a lane departure warning function when the vehicle is driven at speeds of approximately 72 km/h (45 MPH) or more.
- When the vehicle approaches either the left or the right side of the traveling lane, a warning will sound and the lane departure warning lamp (yellow) on the combination meter will blink to alert the driver.
- The warning function will stop when the vehicle returns inside of the lane markers.



BASIC OPERATIONS

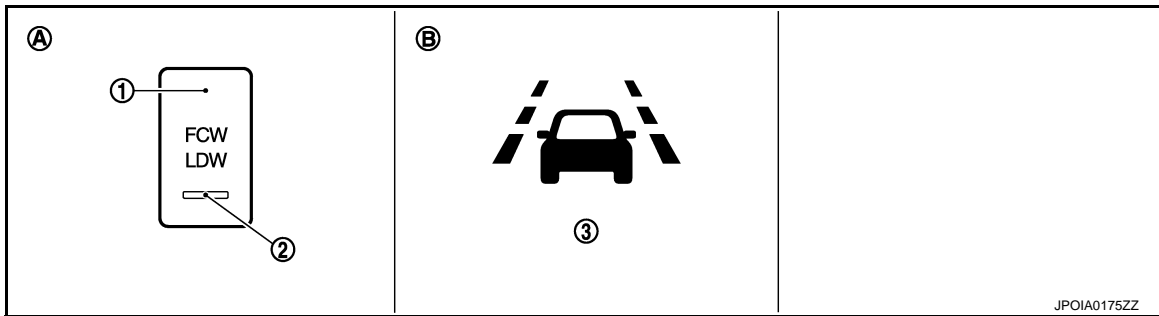
Switches And Indicator/Warning Lamps

CCS

LANE DEPARTURE WARNING (LDW) SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]



1. LDW switch (Shared with the FCW system)
 2. LDW ON indicator (Shared with the FCW system)
 3. Lane departure warning lamp (Yellow)
- A. On the instrument driver lower panel B. On the combination meter

Bulb Check Action and Fail-safe Indication

Vehicle condition/ Driver's operation	LDW ON indicator	Indication on the combination meter
Ignition switch: OFF ⇒ ON	2 sec. ON	<p style="text-align: center;">(Yellow) ON (Green) ON</p> <p style="text-align: right; font-size: small;">JPOIA0017GB</p>
When DTC is detected (Except "C1B01" or "C1B03")	ON	<p style="text-align: center;">(Yellow) ON</p> <p style="text-align: right; font-size: small;">JPOIA0019GB</p>
Camera aiming is not completed ("C1B01" is detected)	ON	<p style="text-align: center;">(Yellow) Blink</p> <p style="text-align: right; font-size: small;">JPOIA0020GB</p>
Temporary disabled status at high temperature ("C1B03" is detected)	Blink	OFF

LDW INITIAL STATE CHANGE

CAUTION:

Never change LDW initial state "ON" ⇒ "OFF" without the consent of the customer.

LDW initial state can be changed.

- LDW initial ON* - LDW function is automatically turned ON, when the ignition switch OFF ⇒ ON.
- LDW initial OFF - LDW function is still OFF when the ignition switch OFF ⇒ ON.

*: Factory setting

How to change LDW initial state

1. Turn ignition switch ON.
2. Switch LDW and LDP functions to OFF.
3. Push and hold LDW switch for more than 4 seconds.
4. Buzzer sounds and blinking of the lane departure warning lamp informs that the LDW initial state change is completed.

LANE DEPARTURE WARNING (LDW) SYSTEM

[LDW & LDP]

< SYSTEM DESCRIPTION >

LDW SYSTEM CONTROL DESCRIPTION

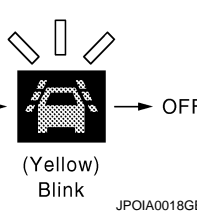
- LDW system is controlled by lane camera unit.
- Lane camera unit monitors lane markers of the traveling lane.
- Combination meter turns the lane departure warning lamp ON/OFF according to the signal from the lane camera unit via CAN communication (through unified meter and A/C amp.).
- When the lane camera unit judges vehicle deviation from the traveling lane, it controls following actions to alert the driver.
 - Requests the lane departure warning lamp activation to combination meter.
 - Controls the lane departure warning buzzer.

LDW OPERATING CONDITION

- LDW ON indicator: ON
- NOTE:**
LDP ON indicator lamp is OFF.
- Vehicle speed: approximately 72 km/h (45 MPH) or more

NOTE:

For details of LDW system operating conditions, refer to normal operating condition [CCS-498, "Description"](#).

Input		Output			
Vehicle speed (Approx.) [km/h (MPH)]	Vehicle condition/ Driver's operation	Action	LDWON indicator	Indication on the combination meter	Buzzer
Less than 64 (40)	Close to lane marker	No action	ON	OFF	—
72 (45) or more	Close to lane marker	Warning <ul style="list-style-type: none"> • Buzzer sounds • Warning lamp blinks 	ON		Short continuous beeps
	<ul style="list-style-type: none"> • Close to lane marker • Turn signal ON (Deviate side) 	No action	ON	OFF	—

SIGNAL INPUT/OUTPUT BY CAN COMMUNICATION

Lane camera unit receives signals via CAN communication. It also detects vehicle conditions that are necessary for LDW control.

Reception Unit	Signal Name	Transmission Unit	Description
Lane camera unit	Vehicle speed signal	ABS actuator and electric unit (control unit)	Detects the vehicle speed
	Turn indicator signal	BCM	Detects operation of turn signals
Combination meter (through unified meter and A/C amp.)	Lane departure warning lamp signal	Lane camera unit	Turns the lane departure warning lamp ON/OFF according to the request

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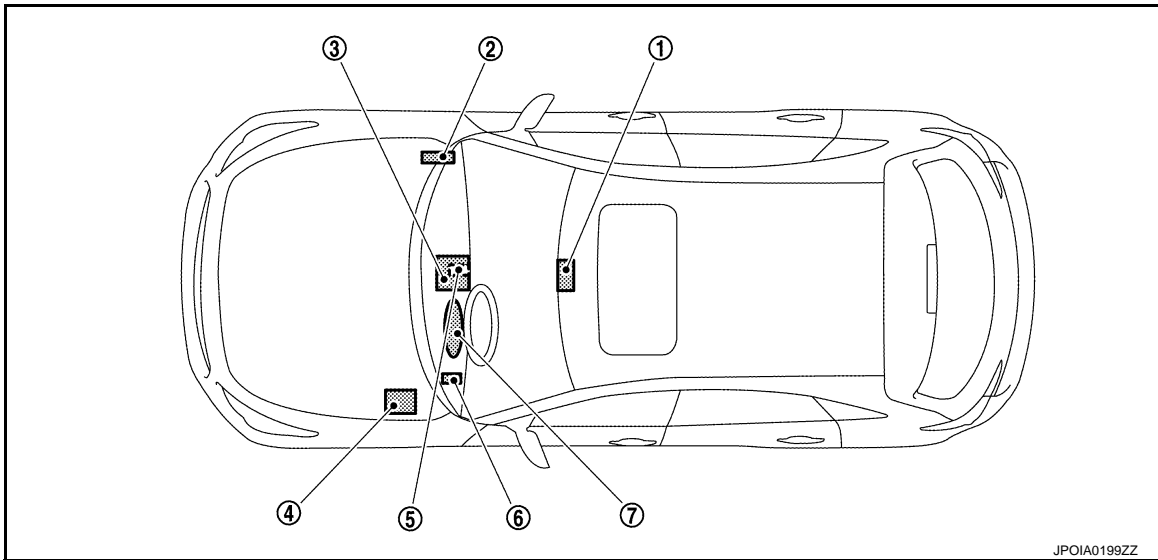
LANE DEPARTURE WARNING (LDW) SYSTEM

< SYSTEM DESCRIPTION >

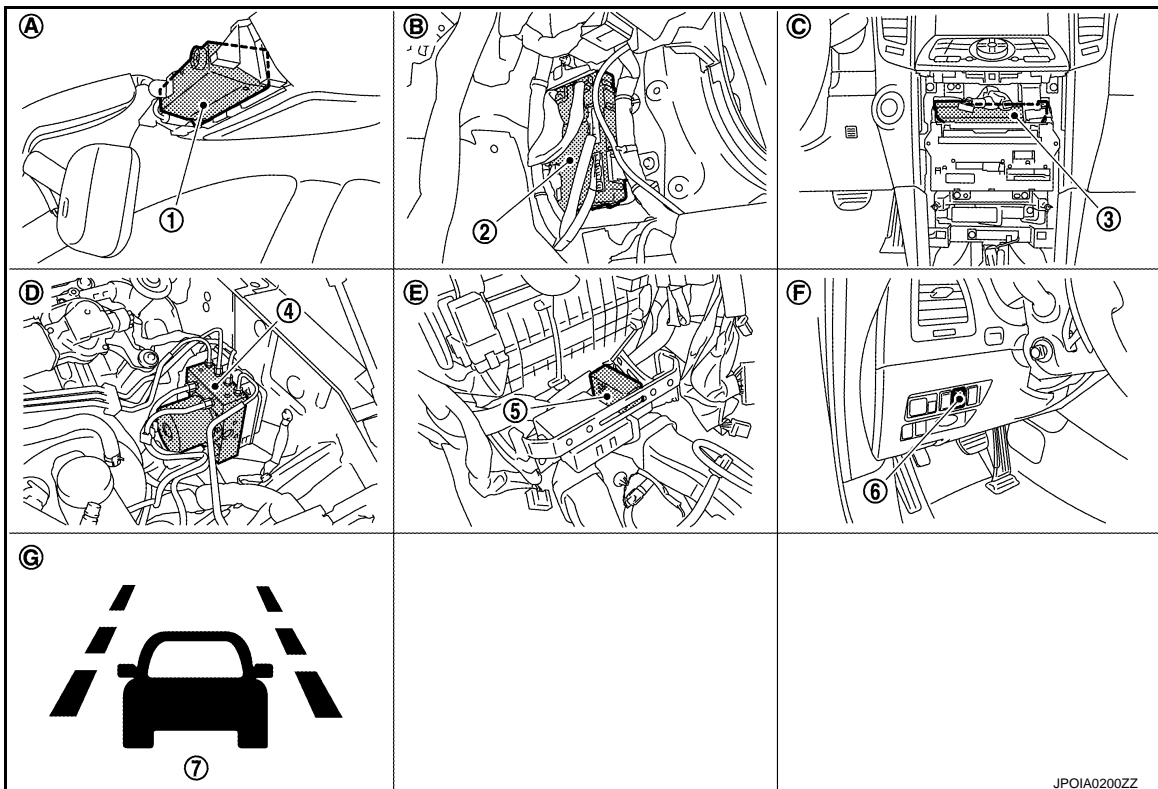
[LDW & LDP]

Component Parts Location

INFOID:00000003867053



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|--|----------------------------------|-------------------------------|
| 1. Lane camera unit | 2. BCM | 3. Unified meter and A/C amp. |
| 4. ABS actuator and electric unit (control unit) | 5. Lane departure warning buzzer | 6. LDW switch |
| 7. Lane departure warning lamp (Yellow) | | |



- | | | |
|--|-------------------------------------|-------------------------------|
| 1. Lane camera unit | 2. BCM | 3. Unified meter and A/C amp. |
| 4. ABS actuator and electric unit (control unit) | 5. Lane departure warning buzzer | 6. LDW switch |
| 7. Lane departure warning lamp (Yellow) | | |
| A. Front of the map lamp | B. Dash side lower (passenger side) | C. Behind the cluster lid C |

LANE DEPARTURE WARNING (LDW) SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]

- D. Inside the brake master cylinder cover E. Behind the console finisher assembly F. Instrument driver lower panel (LH)
- G. On the combination meter

A

Component Description

INFOID:000000003867054

B

Component	Description
Lane camera unit (LDW controller)	<ul style="list-style-type: none"> • Detects the lane marker by the built-in camera. • Judges the lane departure depending on the lane detection result and each signals. • Controls the lane departure warning buzzer, lane departure warning lamp and LDW ON indicator.
ABS actuator and electric unit (control unit)	Transmits vehicle speed signal to lane camera unit via CAN communication.
LDW switch	Inputs the switch signal to lane camera unit.
LDW ON indicator (On the LDW switch)	Indicates LDW system status.
Lane departure warning buzzer	Gives a warning according to the direction from lane camera unit.
Combination meter	Turns the lane departure warning lamp and LDP ON indicator lamp ON/OFF according to the signals from the lane camera unit via CAN communication (through unified meter and A/C amp.).
Lane departure warning lamp (Yellow)	<ul style="list-style-type: none"> • Blinks when LDW is functioning to alert the driver. • Stays ON when LDW system is malfunctioning.
BCM	Transmits turn indicator signal to lane camera unit via CAN communication.

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LANE DEPARTURE PREVENTION (LDP) SYSTEM

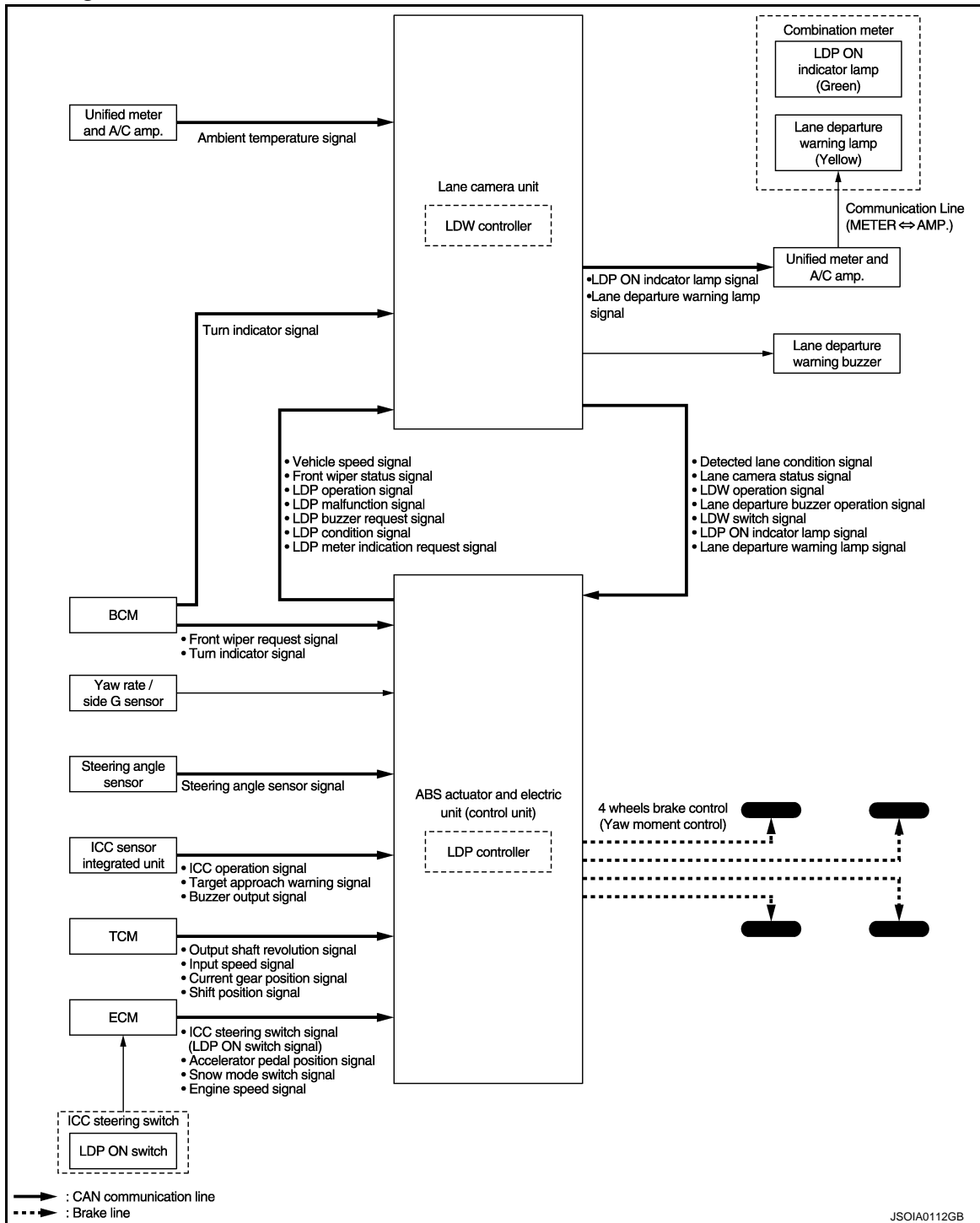
< SYSTEM DESCRIPTION >

[LDW & LDP]

LANE DEPARTURE PREVENTION (LDP) SYSTEM

System Diagram

INFOID:000000003867055



System Description

INFOID:000000003867056

OUTLINE

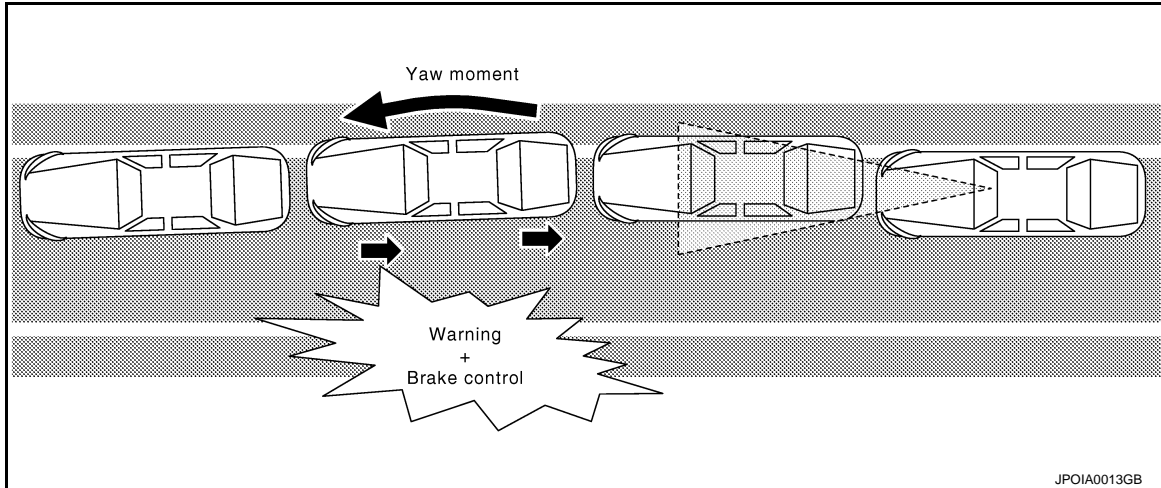
- Lane Departure Prevention (LDP) system provides a lane departure warning and brake control assistance when the vehicle is driven at speeds of approximately 72 km/h (45 MPH) or more.
- When the vehicle approaches either the left or the right side of the traveling lane, a warning sounds and the lane departure warning lamp (yellow) on the combination meter blinks to alert the driver.
- Then, the LDP system automatically applies the brakes for a short period of time to help assist the driver to return the vehicle to the center of the traveling lane.

LANE DEPARTURE PREVENTION (LDP) SYSTEM

< SYSTEM DESCRIPTION >

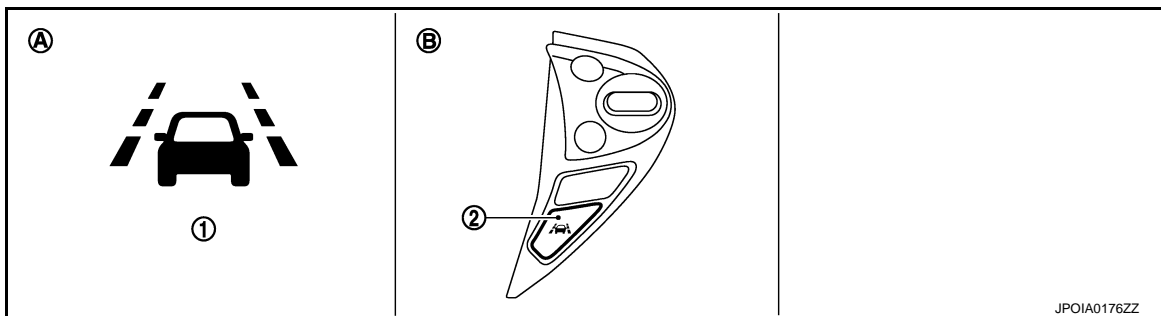
[LDW & LDP]

- The warning and assist functions stop when the vehicle returns to a position inside of the lane marker.



BASIC OPERATIONS

Switches And Indicator/Warning Lamps



- LDP ON indicator lamp (Green)
 - Lane departure warning lamp (Yellow)
 - LDP ON switch
- A. On the combination meter B. On the ICC steering switch

Bulb Check Action and Fail-safe Indication

Vehicle condition/Driver's operation	Indication on the combination meter
Ignition switch: OFF ⇒ ON	<p>OFF → (Yellow) ON → (Green) ON → OFF</p> <p>JPOIA0017GB</p>
When DTC is detected (Except "C1B01" or "C1B03")	<p>OFF → (Yellow) ON</p> <p>JPOIA0019GB</p>

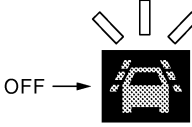

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LANE DEPARTURE PREVENTION (LDP) SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]

Vehicle condition/Driver's operation	Indication on the combination meter
Camera aiming is not completed ("C1B01" is detected)	 <p style="text-align: center;">(Yellow) Blink JPOIA0020GB</p>
Temporary disabled status at high temperature ("C1B03" is detected)	 <p style="text-align: center;">(Green) Blink JPOIA0036GB</p>

LDP SYSTEM CONTROL DESCRIPTION

- LDP system is controlled by lane camera unit and LDP controller [ABS actuator and electric unit (control unit)].

NOTE:

LDP controller is integrated in the ABS actuator and electric unit (control unit).

- Lane camera unit monitors lane markers of the traveling lane. It transmits the detected lane condition signal to ABS actuator and electric unit (control unit) via CAN communication.
- ABS actuator and electric unit (control unit) detects vehicle conditions depending on each signal.
- Combination meter turns the lane departure warning lamp and LDP ON indicator lamp ON/OFF according to the signals from the lane camera unit via CAN communication (through unified meter and A/C amp.).
- When ABS actuator and electric unit (control unit) judges vehicle deviation from the traveling lane, it controls following actions.
 - Requests warning to the lane camera unit via CAN communication to alert the driver. And then lane camera unit controls the lane departure warning buzzer and it requests the lane departure warning lamp activation to combination meter.
 - Calculates the necessary yaw moment. And then it controls the brake pressure of each wheel individually to generate the intended movement.

LDP OPERATING CONDITION

- LDP ON indicator lamp: ON

NOTE:

LDW ON indicator is OFF.

- Vehicle speed: approximately 72 km/h (45 MPH) or more


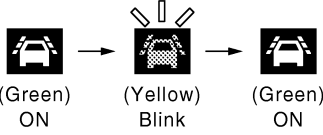

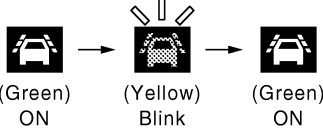
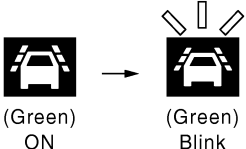
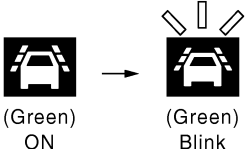
NOTE:

For details of LDP system operating conditions, refer to normal operating condition [CCS-498. "Description"](#).

LANE DEPARTURE PREVENTION (LDP) SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]

Input		Output			
Vehicle speed (Approx.) [km/h (MPH)]	Vehicle condition/ Driver's operation	Action	Indication on the combination meter	Buzzer	
Less than 64 (40)	Close to lane marker	No action	 (Green) ON <small>JPOIA0021GB</small>	—	
	Close to lane marker	Warning and yawing <ul style="list-style-type: none"> Buzzer sounds Warning lamp blinks Brake control 	 <small>JPOIA0022GB</small>	Short continu- ous beeps	
	<ul style="list-style-type: none"> Close to lane marker Turn signal ON (Deviate side) 	No action	 (Green) ON <small>JPOIA0021GB</small>	—	
	72 (45) or more	Close to lane with soft brak- ing	Warning <ul style="list-style-type: none"> Buzzer sounds Warning lamp blinks 	 <small>JPOIA0022GB</small>	Short continu- ous beeps
	VDC OFF switch: OFF ⇒ ON	Cancellation <ul style="list-style-type: none"> Buzzer sounds Indicator lamp blinks NOTE: When LDP ON switch is ON ⇒ OFF, indicator lamp is turned OFF.	 <small>JPOIA0023GB</small>	Beep	
	SNOW MODE switch: OFF ⇒ ON (If equipped)	Cancellation <ul style="list-style-type: none"> Buzzer sounds Indicator lamp blinks NOTE: When LDP ON switch is ON ⇒ OFF, indicator lamp is turned OFF.	 <small>JPOIA0023GB</small>	Beep	

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SIGNAL INPUT/OUTPUT BY CAN COMMUNICATION

The lane camera unit and ABS actuator and electric unit (control unit) transmit/receive each signals via CAN communication. They also detect the vehicle conditions necessary for LDP control.

LANE DEPARTURE PREVENTION (LDP) SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]

Reception Unit	Signal Name	Transmission Unit	Description (Reception unit uses...)
Lane camera unit	LDP operation signal	ABS actuator and electric unit (control unit)	Detects the LDP operating condition
	LDP condition signal		Detects the LDP conditions
	LDP buzzer request signal		Controls the lane departure warning buzzer according to the request
	LDP meter indication request signal		Controls the LDP ON indicator lamp and lane departure warning lamp according to the request
	Vehicle speed signal		Detects the vehicle speed
	Front wiper status signal		Detects operation of the front wiper
	Turn indicator signal	BCM	Detects operation of turn signals
Ambient temperature signal	Unified meter and A/C amp.	Detects the ambient temperature	
ABS actuator and electric unit (control unit)	Detected lane condition signal	Lane camera unit	Detects the lane marker condition
	Lane camera status signal		Detects the lane camera status
	LDW operation signal		Detects the LDW operation
	Lane departure buzzer operation signal		Detects the lane departure warning buzzer operation
	LDW switch signal		Detects LDW switch status
	LDP ON indicator lamp signal		Detects the LDP ON indicator lamp condition
	Lane departure warning lamp signal		Detects the lane departure warning lamp condition
	Snow mode switch signal	ECM	Detects the snow mode status
	ICC steering switch signal (LDP ON switch signal)		Detects LDP ON switch status
	Accelerator pedal position signal		Detects vehicle conditions to calculate the acceleration/deceleration of the vehicle
	Engine speed signal		
	Shift position signal	TCM	Detects the transmission conditions
	Output shaft revolution signal		
	Input speed signal		
	Current gear position signal		
	Steering angle sensor signal	Steering angle sensor	Detects the steering angle
	ICC operation signal	ICC sensor integrated unit	Detects ICC system conditions
Target approach warning signal			
Buzzer output signal			
Turn indicator signal	BCM	Detects operation of turn signals	
Front wiper request signal		Detects operation of the front wiper	
Combination meter (through unified meter and A/C amp.)	LDP ON indicator lamp signal	Lane camera unit	Turns the LDP ON indicator lamp ON/OFF according to the request
	Lane departure warning lamp signal		Turns the lane departure warning lamp ON/OFF according to the request

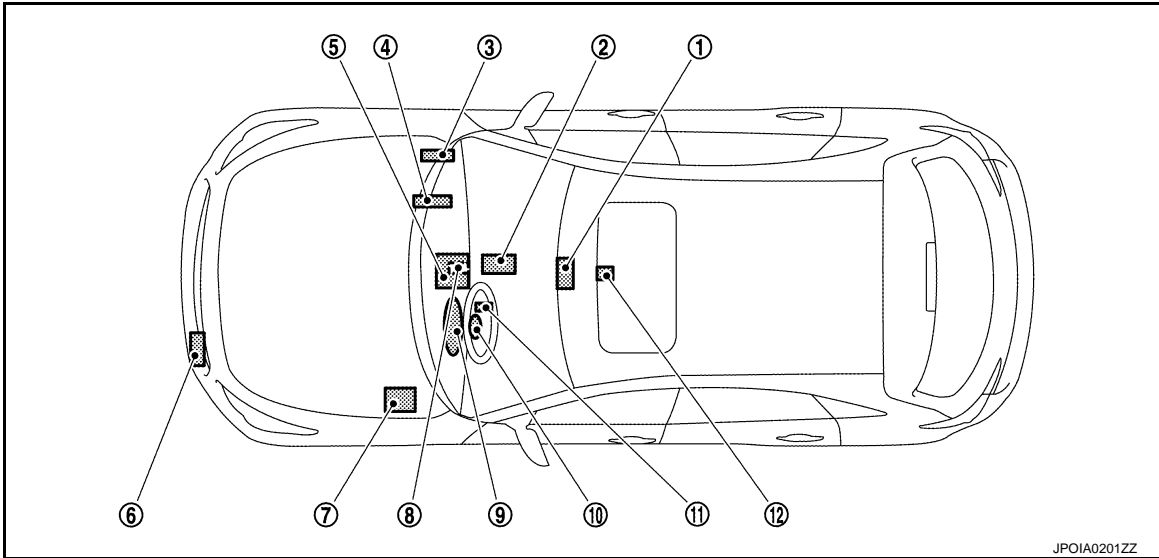
LANE DEPARTURE PREVENTION (LDP) SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]

Component Parts Location

INFOID:000000003867057



- | | | |
|--|----------------------------------|---|
| 1. Lane camera unit | 2. TCM | 3. BCM |
| 4. ECM | 5. Unified meter and A/C amp. | 6. ICC sensor integrated unit |
| 7. ABS actuator and electric unit (control unit) | 8. Lane departure warning buzzer | 9. <ul style="list-style-type: none">• LDP ON indicator lamp (Green)• Lane departure warning lamp (Yellow) |
| 10. Steering angle sensor | 11. LDP ON switch | 12. Yaw rate/side G sensor |

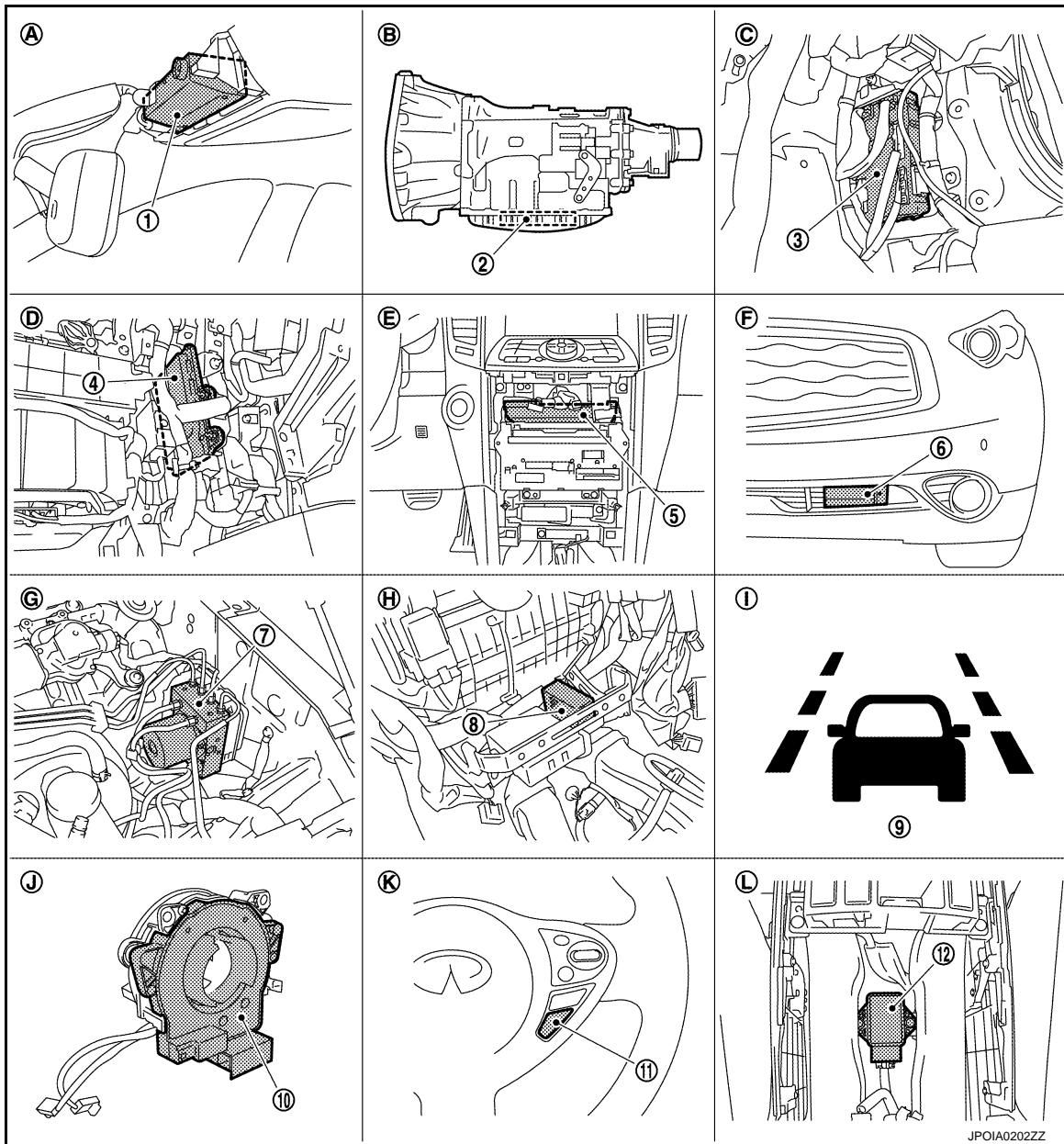
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LANE DEPARTURE PREVENTION (LDP) SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]



- | | | |
|--|---|--|
| 1. Lane camera unit | 2. TCM | 3. BCM |
| 4. ECM | 5. Unified meter and A/C amp. | 6. ICC sensor integrated unit |
| 7. ABS actuator and electric unit (control unit) | 8. Lane departure warning buzzer | 9. • LDP ON indicator lamp (Green)
• Lane departure warning lamp (Yellow) |
| 10. Steering angle sensor | 11. LDP ON switch | 12. Yaw rate/side G sensor |
| A. Front of the map lamp | B. Integrated in the A/T assembly | C. Dash side lower (passenger side) |
| D. Behind the glove box | E. Behind the cluster lid C | F. Front bumper LH |
| G. Inside brake master cylinder cover | H. Behind the console finisher assembly | I. On the combination meter |
| J. Integrated in the spiral cable | K. On the ICC steering switch | L. Under the center console |

Component Description

INFOID:000000003867058

LANE DEPARTURE PREVENTION (LDP) SYSTEM

[LDW & LDP]

< SYSTEM DESCRIPTION >

Component	Description
Lane camera unit	<ul style="list-style-type: none"> • Detects the lane marker by the built-in camera. • Judges the lane departure depending on the lane detection result and each signal. • Transmits the detected lane conditions to ABS actuator and electric unit (control unit) via CAN communication. • Controls the lane departure warning buzzer, lane departure warning lamp, LDW ON indicator and LDP ON indicator lamp.
ABS actuator and electric unit (control unit)	<ul style="list-style-type: none"> • Transmits vehicle speed signal to lane camera unit via CAN communication. • Judges necessary yaw moment depending on each signal. • Controls the brake pressure of each wheel individually to generate the intended movement.
Lane departure warning buzzer	Gives a warning according to the direction from lane camera unit.
LDP ON switch (On the ICC steering switch)	Inputs the switch signal to ECM.
Combination meter	Turns the lane departure warning lamp and LDP ON indicator lamp ON/OFF according to the signals from the lane camera unit via CAN communication (through unified meter and A/C amp.).
LDP ON indicator lamp (Green)	Indicates LDP system status.
Lane departure warning lamp (Yellow)	<ul style="list-style-type: none"> • Blinks when LDP is functioning to alert the driver. • Stays ON when LDW/LDP system is malfunctioning.
BCM	<ul style="list-style-type: none"> • Transmits turn indicator signal to lane camera unit via CAN communication. • Transmits vehicle conditions to ABS actuator and electric unit (control unit) via CAN communication.
ECM	Transmits vehicle conditions and ICC steering switch signal (LDP ON switch signal) to ABS actuator and electric unit (control unit) via CAN communication.
Unified meter and A/C amp.	Transmits ambient temperature signal to lane camera unit via CAN communication.
Steering angle sensor	Transmits steering angle sensor signal to ABS actuator and electric unit (control unit) via CAN communication.
TCM	Transmits vehicle conditions to ABS actuator and electric unit (control unit) via CAN communication.
ICC sensor integrated unit	Transmits ICC system conditions to ABS actuator and electric unit (control unit) via CAN communication.
Yaw rate/side G sensor	Inputs detected yaw rate signal to ABS actuator and electric unit (control unit).

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DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

[LDW & LDP]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

CONSULT-III Function (LANE CAMERA)

INFOID:000000003867059

DESCRIPTION

CONSULT-III performs the following functions by communicating with the lane camera unit.

Select diag mode	Function
Work support	<ul style="list-style-type: none"> Performs the camera aiming. Displays causes of automatic cancellation of the LDP function.
Self Diagnostic Result	Displays memorized DTC in the lane camera unit.
Data Monitor	Displays real-time data of lane camera unit.
Active Test	Enables operation check of electrical loads by sending driving signal to them.
Ecu Identification	Displays part number of lane camera unit.

WORK SUPPORT

Work support item	Function
CAUSE OF AUTO-CANCEL	Indicates causes of automatic cancellation of the LDP.
AUTO AIM	Outputs camera unit, calculates dislocation of the camera, and displays adjustment direction. Refer to CCS-418, "CAMERA AIMING ADJUSTMENT : Description" .
AIM CHECK	<p>NOTE: The item is indicated, but not used.</p>

Cause of Auto-Cancel Display Item List

When LDP control is canceled under the operating condition, "CAUSE OF AUTO-CANCEL" is memorized.

- Last five cancel (system cancel) causes are displayed.
- "CAUSE OF AUTO-CANCEL" displays the number of times of ignition switch ON/OFF up to a maximum of "39". "39" is kept even when the number exceeds "39". The number returns to 0 when detecting the same cancellation causes are detected.

Cause of cancellation	Description
NO RECORD	—
Operating VDC/ABS	VDC or ABS function was operated.
Vehicle dynamics	Vehicle behavior exceeds specified value.
Steering speed	Steering speed was more than the specified value in evasive direction.
End by yaw angle	Yaw angle was the end of LDP control.
Departure yaw large	Detected more than the specified value of yaw angle in departure direction.
ICC WARNING	Target approach warning of ICC system was activated.
VDC OFF SW	VDC OFF switch was pressed.
CURVATURE	Road curve was more than the specified value.
Steering angle large	Steering angle was more than the specified value.
ICC main SW hold ON	ICC MAIN switch was held ON for more than a certain period.
Brake is operated	Brake pedal was operated.
Operating BA	IBA (Intelligent Brake Assist) was activated.
Lateral offset	Distance of vehicle and lane was detached in lateral direction more than the specified value.
Lane marker lost	Lane camera unit lost the trace of lane marker.
Lane marker unclear	Detected lane marker was unclear.
Bank	Road bank angle was more than the specified value.
Yaw acceleration	Detected yawing speed was more than the specified value.
Deceleration large	Deceleration in a longitudinal direction was more than the specified value.

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

[LDW & LDP]

< SYSTEM DESCRIPTION >

Accel is operated	Accelerator pedal was depressed.
Departure steering	Steering wheel was steered more than the specified value in departure direction.
Evasive steering	Steering wheel was steered more than the specified value in the evasive direction.
R range	Selector lever was operated to R range.
Parking brake drift	Rear wheels lock was detected.
Not operating condition	Did not meet the operating condition (vehicle speed, turn signal operation, etc.).

SELF DIAGNOSTIC RESULT

Displays memorized DTC in lane camera unit. Refer to [CCS-483, "DTC Index"](#).

DATA MONITOR

Monitored Item [unit]	Description
LDW SW [On/Off]	Switch status judged from LDW switch signal NOTE: Shared with the FCW system
LDW ON LAMP [On/Off]	Signal output status of LDW ON indicator NOTE: Shared with the FCW system
LDP ON IND [On/Off]	Request signal status of LDP ON indicator lamp
LANE DPRT W/L [On/Off]	Request signal status of lane departure warning lamp
BUZZER OUTPUT [On/Off]	Signal output status of lane departure warning buzzer
LC INACCURAT [On/Off]	Lane camera unit status
CAM HIGH TEMP [On/Off]	Status of lane camera unit high temperature judgment
VHCL SPD SE [km/h] or [mph]	Vehicle speed received from ABS actuator and electric unit (control unit) via CAN communication
TURN SIGNAL [Off/LH/RH]	Status of "Turn signal" determined from BCM via CAN communication
LANE DETCT LH [On/Off]	Left side lane marker detection
LANE DETCT RH [On/Off]	Right side lane marker detection
CROSS LANE LH [On/Off]	Condition that the vehicle is crossing left lane marker
CROSS LANE RH [On/Off]	Condition that the vehicle is crossing right lane marker
WARN LANE LH [On/Off]	Warning for left lane marker
WARN LANE RH [On/Off]	Warning for right lane marker
VALID POS LH [VLD/INVLD]	Lateral position for left lane marker is valid
VALID POS RH [VLD/INVLD]	Lateral position for right lane marker is valid
AIMING DONE [OK/NG]	Status that camera aiming is done
AIMING RESULT [OK/NOK]	Result of camera aiming
XOFFSET [pixel]	Lane camera unit installation condition
CHK AIM YAW [deg]	Check result of camera aiming
CHK AIM ROLL [deg]	Check result of camera aiming
CHK AIM PITCH [deg]	Check result of camera aiming
FCTRY AIM YAW [deg]	Lane camera unit installation condition
FCTRY AIM ROL [deg]	Lane camera unit installation condition
FCTRY AIM PIT [deg]	Lane camera unit installation condition

ACTIVE TEST

CAUTION:

- Never perform the active test while driving.
- Active test cannot be started while the lane departure warning lamp is illuminated.

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

Active test item	Operation	Description
BUZZER DRIVE	On	Outputs the voltage to sound the lane departure warning buzzer.
	Off	Stops the voltage to sound the lane departure warning buzzer.
LDW ON IND	On	Outputs the voltage to illuminate the LDW ON indicator (on the LDW switch). NOTE: Shared with the FCW system
	Off	Stops the voltage to illuminate the LDW ON indicator.
LDP ON IND	On	Requests the LDP ON indicator lamp ON [on the combination meter (Green)] to combination meter (through unified meter and A/C amp.) via CAN communication.
	Off	Stops the illumination request.
LANE DEPARTURE W/L	On	Requests the lane departure warning lamp ON [on the combination meter (Yellow)] to combination meter (through unified meter and A/C amp.) via CAN communication.
	Off	Stops the illumination request.

NOTE:

“Active test” of indicator/warning lamp cannot be performed when applicable indicator/warning lamp is turned ON.

DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

< SYSTEM DESCRIPTION >

[LDW & LDP]

DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

CONSULT-III Function

INFOID:000000003867129

FUNCTION

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

Diagnostic test mode	Function
Work support	This mode enables a technician to adjust some devices faster and more accurately by following the indications on CONSULT-III.
Self diagnostic result	Self-diagnostic results can be read and erased quickly.
Data monitor	Input/Output data in the ABS actuator and electric unit (control unit) can be read.
Active test	CONSULT-III drives some actuators apart from ABS actuator and electric unit (control unit) and also shifts some parameters in a specified range.
ECU identification	ABS actuator and electric unit (control unit) part number can be read.
Specific Function	Specific LDP data in the ABS actuator and electric unit (control unit) can be read.

WORK SUPPORT

CAUTION:

Erase DTC memory of the lane camera unit after implementing work support. Refer to [CCS-436, "CONSULT-III Function \(LANE CAMERA\)"](#).

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

SELF DIAGNOSTIC RESULT

Operation Procedure

Before performing the self-diagnosis, start engine and drive vehicle at 30 km/h (19 MPH) or more for approximately 1 minute.

Display Item List

Refer to [CCS-494, "DTC Index"](#).

How to Erase Self-diagnosis Results

After erasing DTC memory, start the engine and drive the vehicle at 30 km/h (19 MPH) or more for approximately 1 minute as the final inspection, and make sure that the ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp and brake warning lamp turn OFF.

CAUTION:

If memory cannot be erased, perform applicable diagnosis.

NOTE:

- When the wheel sensor malfunctions, after inspecting the wheel sensor system, ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp and brake warning lamp will not turn OFF even when the system is normal unless the vehicle is driven at approximately 30 km/h (19 MPH) or more for approximately 1 minute.
- Brake warning lamp will turn ON in case of parking brake operation (when switch is ON) or in case of brake fluid level switch operation (when brake fluid is insufficient).
- VDC OFF switch should not stay in "ON" position.

DATA MONITOR

Display Item List

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DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

< SYSTEM DESCRIPTION >

[LDW & LDP]

×: Applicable ▼: Optional item

Monitor item (Unit)	SELECT MONITOR ITEM		Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	
FR LH SENSOR [km/h (MPH)]	×	×	Wheel speed
FR RH SENSOR [km/h (MPH)]	×	×	
RR LH SENSOR [km/h (MPH)]	×	×	
RR RH SENSOR [km/h (MPH)]	×	×	
STOP LAMP SW (On/Off)	×	×	Stop lamp switch signal status
BATTERY VOLT (V)	×	×	Battery voltage supplied to the ABS actuator and electric unit (control unit)
SLCT LVR POSI	×	×	A/T selector lever position
YAW RATE SEN (d/s)	×	×	Yaw rate detected by yaw rate/side G sensor
OFF SW (On/Off)	×	×	VDC OFF switch signal status
ACCEL POS SIG (%)	×	▼	Throttle actuator opening/closing is displayed (Linked with accelerator pedal)
SIDE G-SENSOR (m/s ²)	×	▼	Transverse G detected by yaw rate/side G sensor
STR ANGLE SIG (°)	×	▼	Steering angle detected by steering angle sensor
PRESS SENSOR (bar)	×	▼	Brake fluid pressure detected by pressure sensor
ENGINE RPM [tr/min (rpm)]	×	▼	Engine speed
FR RH IN SOL (On/Off) (Note 1)	▼	×	Operation status of each solenoid valve
FR RH OUT SOL (On/Off) (Note 1)	▼	×	
FR LH IN SOL (On/Off) (Note 1)	▼	×	
FR LH OUT SOL (On/Off) (Note 1)	▼	×	
RR RH IN SOL (On/Off) (Note 1)	▼	×	
RR RH OUT SOL (On/Off) (Note 1)	▼	×	
RR LH IN SOL (On/Off) (Note 1)	▼	×	
RR LH OUT SOL (On/Off) (Note 1)	▼	×	
MOTOR RELAY (On/Off)	▼	×	Motor and motor relay operation
ACTUATOR RLY (On/Off) (Note 1)	▼	×	Actuator relay operation
ABS WARN LAMP (On/Off)	▼	×	ABS warning lamp

DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

< SYSTEM DESCRIPTION >

[LDW & LDP]

Monitor item (Unit)	SELECT MONITOR ITEM		Remarks	
	ECU INPUT SIGNALS	MAIN SIGNALS		
OFF LAMP (On/Off)	▼	×	VDC OFF indicator lamp	A
SLIP LAMP (On/Off)	▼	×	SLIP indicator lamp	B
FLUID LEV SW (On/Off)	▼	▼	Brake fluid level switch signal status	C
PARK BRAKE SW (On/Off)	▼	▼	Parking brake switch signal status	D
EBD SIGNAL (On/Off)	▼	▼	EBD operation	E
ABS SIGNAL (On/Off)	▼	▼	ABS operation	E
TCS SIGNAL (On/Off)	▼	▼	TCS operation	F
VDC SIGNAL (On/Off)	▼	▼	VDC operation	F
ABS FAIL SIG (On/Off)	▼	▼	ABS fail-safe signal	G
TCS FAIL SIG (On/Off)	▼	▼	TCS fail-safe signal	H
VDC FAIL SIG (On/Off)	▼	▼	VDC fail-safe signal	H
CRANKING SIG (On/Off)	▼	▼	Crank operation	I
USV[FR-RL] (On/Off) (Note 1)	▼	▼	VDC switch-over valve	J
USV[FL-RR] (On/Off) (Note 1)	▼	▼		J
HSV[FR-RL] (On/Off) (Note 1)	▼	▼		K
HSV[FL-RR] (On/Off) (Note 1)	▼	▼		L
BST OPER SIG (On/Off)	▼	▼	Booster operation signal	L
V/R OUTPUT (On/Off)	▼	▼	Solenoid valve relay activated	M
M/R OUTPUT (On/Off)	▼	▼	Actuator motor and motor relay activated	M
LDP) APP SEN (%) (Note 2)	×	×	Accelerator pedal position sensor status received from ECM via CAN communication	N
LDP) YAW ORDER (×100Nm) (Note 2) (Note 3)	—	—	Calculated target yaw moment	N
LDP) SHIFT POSITION (OFF/P/R/N/D/MM 1st – MM 7th) (Note 2)	×	×	Shift position received from TCM via CAN communication	P
LDP) ICC MAIN SW (On/Off) (Note 2)	×	×	ICC main switch status received from ECM via CAN communication	P
LDP) LDP ON SW (On/Off) (Note 2)	×	×	LDP ON switch status received from ECM via CAN communication	P

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DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

< SYSTEM DESCRIPTION >

[LDW & LDP]

Monitor item (Unit)	SELECT MONITOR ITEM		Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	
LDP) WIPER SIGNAL (Stop/PRTCT/1low/1high/Low/High) (Note 2)	×	×	Front wiper operating condition received from BCM via CAN communication
LDP) TURN SIGNAL (Off/LH/RH/LH&RH) (Note 2)	×	×	Turn signal operating condition received from BCM via CAN communication
LDP) STOP LMP SW (On/Off) (Note 2)	×	×	Stop lamp switch signal status
LDP) WARN REQ (On/Off) (Note 2) (Note 3)	—	—	Status of warning request that transmits to lane camera unit via CAN communication
LDP) WARN control (On/Off) (Note 2) (Note 3)	—	—	Status of warning main controller for LDP
LDP) REDY signal (On/Off) (Note 2) (Note 3)	—	—	Status of internal judgment by LDP controller [ABS actuator and electric unit (control unit)]
LDP) STATUS signal (STANDBY/WARN/MASK/Off) (Note 2) (Note 3)	—	—	Status of internal judgment by LDP controller [ABS actuator and electric unit (control unit)]
LDP) BRAKE SW (On/Off) (Note 2)	×	×	Brake switch signal status
LDP) LDW SW (On/Off) (Note 2)	×	×	LDW switch status received from lane camera unit via CAN communication
LDP) Camera lost (Detect/Deviate/Both) (Note 2) (Note 3)	—	—	Lane marker detected condition received from lane camera unit via CAN communication
LDP) Lane unclear (On/Off) (Note 2) (Note 3)	—	—	Lane marker condition received from lane camera unit via CAN communication

NOTE:

1: A brief moment of On/Off condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

2: With LDP models.

3: The item displayed on "SPECIFIC DATA MONITOR" in "Specific Function".

ACTIVE TEST

CAUTION:

- Do not perform active test while driving vehicle.
- Make sure to completely bleed air from brake system.
- The active test cannot be started when ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp and brake warning lamp are ON.
- ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp and brake warning lamp are ON during active test.
- Erase memory of the lane camera unit after implementing active test. Refer to [CCS-436. "CONSULT-III Function \(LANE CAMERA\)".](#)

NOTE:

- When active test is performed while depressing the pedal, the pedal depression amount will change. This is normal. (Only solenoid valve and ABS motor.)
- "TEST IS STOPPED" is displayed 10 seconds after operation start.
- After "TEST IS STOPPED" is displayed, to perform test again.

Test Item

ABS SOLENOID VALVE

- Touch "Up", "Keep" and "Down". Then use screen monitor to check that solenoid valve operates as shown in the table below.

DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

< SYSTEM DESCRIPTION >

[LDW & LDP]

Test item	Display item	Display (Note)		
		Up	Keep	Down
FR RH SOL	FR RH IN SOL	Off	On	On
	FR RH OUT SOL	Off	Off	On*
	USV[FR-RL]	Off	Off	Off
	HSV[FR-RL]	Off	Off	Off
FR LH SOL	FR LH IN SOL	Off	On	On
	FR LH OUT SOL	Off	Off	On*
	USV[FL-RR]	Off	Off	Off
	HSV[FL-RR]	Off	Off	Off
RR RH SOL	RR RH IN SOL	Off	On	On
	RR RH OUT SOL	Off	Off	On*
	USV[FL-RR]	Off	Off	Off
	HSV[FL-RR]	Off	Off	Off
RR LH SOL	RR LH IN SOL	Off	On	On
	RR LH OUT SOL	Off	Off	On*
	USV[FR-RL]	Off	Off	Off
	HSV[FR-RL]	Off	Off	Off

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*: On for 1 to 2 seconds after the touch, and then Off.

NOTE:

A brief moment of On/Off condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

ABS SOLENOID VALVE (ACT)

- Touch “Up”, “ACT UP” and “ACT KEEP”. Then use screen monitor to check that solenoid valve operates as shown in the table below.

Test item	Display item	Display (Note)		
		Up	ACT UP	ACT KEEP
FR RH ABS SOLENOID (ACT)	FR RH IN SOL	Off	Off	Off
	FR RH OUT SOL	Off	Off	Off
	USV[FR-RL]	Off	On	On
	HSV[FR-RL]	Off	On*	Off
FR LH ABS SOLENOID (ACT)	FR LH IN SOL	Off	Off	Off
	FR LH OUT SOL	Off	Off	Off
	USV[FL-RR]	Off	On	On
	HSV[FL-RR]	Off	On*	Off
RR RH ABS SOLENOID (ACT)	RR RH IN SOL	Off	Off	Off
	RR RH OUT SOL	Off	Off	Off
	USV[FL-RR]	Off	On	On
	HSV[FL-RR]	Off	On*	Off
RR LH ABS SOLENOID (ACT)	RR LH IN SOL	Off	Off	Off
	RR LH OUT SOL	Off	Off	Off
	USV[FR-RL]	Off	On	On
	HSV[FR-RL]	Off	On*	Off

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*: On for 1 to 2 seconds after the touch, and then Off.

NOTE:

DIAGNOSIS SYSTEM [ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]

[LDW & LDP]

< SYSTEM DESCRIPTION >

A brief moment of On/Off condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

ABS MOTOR

- Touch “On” and “Off” on screen. Make sure motor relay and actuator relay operates as shown in table below.

Test item	Display item	Display	
		On	Off
ABS MOTOR	MOTOR RELAY	On	Off
	ACTUATOR RLY (Note)	On	On

NOTE:

A brief moment of On/Off condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.

ECU IDENTIFICATION

ABS actuator and electric unit (control unit) part number can be read.

SPECIFIC FUNCTION

Specific Data Monitor

Specific data monitor displays specific LDP operating conditions.

Monitor item (Unit)	Remarks
YAW RATE SEN (d/s)	Yaw rate detected by yaw rate/side G sensor
LDP) YAW ORDER (×100Nm)	Calculated target yaw moment
LDP) WARN REQ (On/Off)	Status of warning request that transmits to lane camera unit via CAN communication
LDP) WARN control (On/Off)	Status of warning main controller for LDP
LDP) REDY signal (On/Off)	Status of internal judgment by LDP controller [ABS actuator and electric unit (control unit)]
LDP) STATUS signal (STANDBY/WARN/MASK/Off)	Status of internal judgment by LDP controller [ABS actuator and electric unit (control unit)]
LDP) Camera lost (Detect/Deviate/Both)	Lane marker detected condition received from lane camera unit via CAN communication
LDP) Lane unclear (On/Off)	Lane marker condition received from lane camera unit via CAN communication

C1B00 CAMERA UNIT MALF

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

DTC/CIRCUIT DIAGNOSIS

C1B00 CAMERA UNIT MALF

DTC Logic

INFOID:000000003867061

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
C1B00	CAMERA UNIT MALF	Lane camera unit internal malfunction	Erase DTC with CONSULT-III	Lane camera unit

Diagnosis Procedure

INFOID:000000003867062

1.ERASE DTC

Erase DTC memory of lane camera unit with self-diagnosis of CONSULT-III.

Is the DTC "C1B00" erased?

- YES >> INSPECTION END
- NO >> Replace the lane camera unit.

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C1B01 CAM AIMING INCOMP

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B01 CAM AIMING INCOMP

DTC Logic

INFOID:000000003867063

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
C1B01	CAM AIMING INCOMP	Camera aiming is not completed.	Camera aiming is completed.	<ul style="list-style-type: none">• Lane camera aiming is not adjusted.• Lane camera unit

Diagnosis Procedure

INFOID:000000003867064

1. CAMERA AIMING

Perform the camera aiming. Refer to [CCS-418. "CAMERA AIMING ADJUSTMENT : Description"](#).

>> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF LANE CAMERA UNIT

Perform the self-diagnosis of lane camera unit with CONSULT-III.

Is the DTC "C1B01" detected?

- YES >> Replace the lane camera unit.
- NO >> INSPECTION END

C1B02 VHCL SPD DATA MALF

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B02 VHCL SPD DATA MALF

DTC Logic

INFOID:000000003867065

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
C1B02	VHCL SPD DATA MALF	Lane camera unit detected vehicle speed signal error from ABS actuator and electric unit (control unit).	Erase DTC with CONSULT-III	<ul style="list-style-type: none">Vehicle speed signalABS actuator and electric unit (control unit)Lane camera unit

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of lane camera unit with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

1. Turn ignition ON.
2. Drive at 40 km/h or more.
3. Stop the vehicle.
4. Perform the self-diagnosis of lane camera unit with CONSULT-III.

Is the DTC "C1B02" detected?

- YES >> Refer to [CCS-447, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003867066

1. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Perform self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is any DTC detected?

- YES >> Perform trouble diagnosis of ABS actuator and electric unit (control unit). Refer to [CCS-494, "DTC Index"](#).
NO >> Replace the lane camera unit.

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CCS

C1B03 ABNRML TEMP DETECT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B03 ABNRML TEMP DETECT

DTC Logic

INFOID:000000003867067

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
C1B03	ABNRML TEMP DETECT	Temperature around lane camera unit is excessively high.	Erase DTC with CONSULT-III	Interior room temperature is excessively high.

Diagnosis Procedure

INFOID:000000003867068

1.COOLING LANE CAMERA UNIT

Cooling the lane camera unit.

>> GO TO 2.

2.ERASE DTC

Erase DTC memory of the lane camera unit with self-diagnosis of CONSULT-III.

Is the DTC "C1B03" erased?

YES >> INSPECTION END

NO >> Replace the lane camera unit.

C1B07 ABS DIAGNOSIS

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B07 ABS DIAGNOSIS

DTC Logic

INFOID:000000003867069

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
C1B07	ABS DIAGNOSIS	<ul style="list-style-type: none">Lane camera unit received that ABS actuator and electric unit (control unit) is detecting any DTC.Lane camera unit received that ABS actuator and electric unit (control unit) is performing "Work support" or "Active test" with CONSULT-III.	Erase DTC with CONSULT-III	ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:000000003867070

1. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Perform self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is any DTC detected?

YES >> Perform trouble diagnosis of ABS actuator and electric unit (control unit). Refer to [CCS-494, "DTC Index"](#).

NO >> GO TO 2.

2. ERASE DTC

Erase DTC memory of the lane camera unit with self-diagnosis of CONSULT-III.

Is the DTC "C1B07" erased?

YES >> INSPECTION END

NO >> Replace the lane camera unit.

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CCS

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U1000 CAN COMM CIRCUIT

Description

INFOID:000000003867071

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H-line, CAN L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only. CAN Communication Signal Chart. Refer to [LAN-32. "CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000003867072

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U1000	CAN COMM CIRCUIT	When lane camera unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	Erase DTC with CONSULT-III	CAN communication

Diagnosis Procedure

INFOID:000000003867073

1.ERASE DTC

Erase DTC memory of the lane camera unit with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF LANE CAMERA UNIT

Perform the self-diagnosis of the lane camera unit with CONSULT-III.

Is the DTC "U1000" displayed?

- YES >> Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).
- NO >> Refer to [GI-35. "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:000000003867074

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U1010	CONTROL UNIT (CAN)	Lane camera unit detected internal CAN communication circuit malfunction.	Erase DTC with CONSULT-III	Lane camera unit

Diagnosis Procedure

INFOID:000000003867075

1. ERASE DTC

Erase DTC memory of lane camera unit with self-diagnosis of CONSULT-III.

Is the DTC "U1010" erased?

- YES >> INSPECTION END
- NO >> Replace the lane camera unit.

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U0122 VDC CAN CIR1 (LDP)

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0122 VDC CAN CIR1 (LDP)

DTC Logic

INFOID:000000003867076

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U0122	VDC CAN CIR1 (LDP)	Lane camera unit detected an error of CAN communication signal that was received from ABS actuator and electric unit (control unit).	Erase DTC with CONSULT-III	<ul style="list-style-type: none">• ABS actuator and electric unit (control unit)• Lane camera unit

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of lane camera unit with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform the self-diagnosis of lane camera unit with CONSULT-III.

Is the DTC "U0122" detected?

- YES >> Refer to [CCS-452, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003867077

1. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Perform self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is any DTC detected?

- YES >> GO TO 2.
NO >> GO TO 4.

2. ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) TROUBLE DIAGNOSIS

Perform trouble diagnosis of ABS actuator and electric unit (control unit). Refer to [CCS-494, "DTC Index"](#).

>> GO TO 3.

3. ERASE DTC

Erase DTC memory of lane camera unit with self-diagnosis of CONSULT-III.

Is the DTC "U0122" erased?

- YES >> INSPECTION END
NO >> Replace the lane camera unit.

4. PROVISIONAL REPLACEMENT OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Remove ABS actuator and electric unit (control unit). Install the normal ABS actuator and electric unit (control unit).

>> GO TO 5.

5. ERASE DTC

Erase DTC memory of lane camera unit with self-diagnosis of CONSULT-III.

Is the DTC "U0122" erased?

- YES >> Replace ABS actuator and electric unit (control unit).

U0122 VDC CAN CIR1 (LDP)

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

NO >> Replace the lane camera unit.

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U0416 VDC CAN CIR2 (LDP)

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0416 VDC CAN CIR2 (LDP)

DTC Logic

INFOID:000000003867078

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U0416	VDC CAN CIR2 (LDP)	Lane camera unit detected an error of CAN communication signal that was received from ABS actuator and electric unit (control unit).	Erase DTC with CONSULT-III	<ul style="list-style-type: none">• ABS actuator and electric unit (control unit)• Lane camera unit

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of lane camera unit with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform the self-diagnosis of lane camera unit with CONSULT-III.

Is the DTC "U0416" detected?

- YES >> Refer to [CCS-454, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#)

Diagnosis Procedure

INFOID:000000003867079

1. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Perform self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is any DTC detected?

- YES >> GO TO 2.
NO >> GO TO 4.

2. ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) TROUBLE DIAGNOSIS

Perform trouble diagnosis of ABS actuator and electric unit (control unit). Refer to [CCS-494, "DTC Index"](#).

>> GO TO 3.

3. ERASE DTC

Erase DTC memory of lane camera unit with self-diagnosis of CONSULT-III.

Is the DTC "U0416" erased?

- YES >> INSPECTION END
NO >> Replace the lane camera unit.

4. PROVISIONAL REPLACEMENT OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Remove ABS actuator and electric unit (control unit). Install the normal ABS actuator and electric unit (control unit).

>> GO TO 5.

5. ERASE DTC

Erase DTC memory of lane camera unit with self-diagnosis of CONSULT-III.

Is the DTC "U0416" erased?

- YES >> Replace ABS actuator and electric unit (control unit).

U0416 VDC CAN CIR2 (LDP)

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

NO >> Replace the lane camera unit.

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C1B00 LDP) CAMERA MALF

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B00 LDP) CAMERA MALF

DTC Logic

INFOID:000000003867080

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
C1B00	LDP) CAMERA MALF	ABS actuator and electric unit (control unit) received that lane camera unit is detecting "C1B00" (Lane camera unit internal malfunction).	Erase DTC with CONSULT-III	Lane camera unit

Diagnosis Procedure

INFOID:000000003867081

1. LANE CAMERA UNIT TROUBLE DIAGNOSIS

Perform trouble diagnosis of the lane camera unit for "C1B00 CAMERA UNIT MALF". Refer to [CCS-445](#), "[DTC Logic](#)".

>> GO TO 2.

2. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "C1B00" erased?

YES >> INSPECTION END

NO >> Replace ABS actuator and electric unit (control unit).

C1B04 LDP) ICC STG SW MALF

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B04 LDP) ICC STG SW MALF

DTC Logic

INFOID:000000003867082

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
C1B04	LDP) ICC STG SW MALF	ABS actuator and electric unit (control unit) received ICC steering switch malfunction from ECM.	Erase DTC with CONSULT-III	<ul style="list-style-type: none">• ICC steering switch circuit• ICC steering switch• ECM• ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:000000003867083

1. ECM TROUBLE DIAGNOSIS

Perform trouble diagnosis of ECM for "P1564 ICC STEERING SWITCH". Refer to the following item.

- VQ35HR: [EC-420, "Description"](#)
- VK50VE: [EC-1037, "Description"](#)

>> GO TO 2.

2. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "C1B04" erased?

- YES >> INSPECTION END
- NO >> Replace ABS actuator and electric unit (control unit).

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CCS

C1B05 LDP) APP SEN MALF

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B05 LDP) APP SEN MALF

DTC Logic

INFOID:000000003867084

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
C1B05	LDP) APP SEN MALF	ABS actuator and electric unit (control unit) detects that accelerator pedal position sensor signal is malfunctioning.	Erase DTC with CONSULT-III	<ul style="list-style-type: none">• Accelerator pedal position sensor• Accelerator pedal position sensor circuit• ECM• ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:000000003867085

1. ECM TROUBLE DIAGNOSIS

Perform trouble diagnosis of ECM for "P2122, P2123 APP SENSOR and P2127, P2128 APP SENSOR". Refer to the following items;

VQ35HR

- P2122, P2123 APP SENSOR: [EC-444. "Description"](#)
- P2127, P2128 APP SENSOR: [EC-448. "Description"](#)

VK50VE

- P2122, P2123 APP SENSOR: [EC-1067. "Description"](#)
- P2127, P2128 APP SENSOR: [EC-1071. "Description"](#)

>> GO TO 2.

2. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "C1B05" erased?

- YES >> INSPECTION END
NO >> Replace ABS actuator and electric unit (control unit).

C1B06 LDP) TCM MALF

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B06 LDP) TCM MALF

DTC Logic

INFOID:000000003867086

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
C1B06	LDP) TCM MALF	ABS actuator and electric unit (control unit) detects that TCM has a malfunction.	Erase DTC with CONSULT-III	<ul style="list-style-type: none">Any of A/T system componentsTCMABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:000000003867087

1.PERFORM SELF-DIAGNOSIS OF TCM

Perform self-diagnosis of TCM with CONSULT-III.

Is any DTC detected?

YES >> GO TO 2.

NO >> Replace ABS actuator and electric unit (control unit).

2.TCM TROUBLE DIAGNOSIS

Perform trouble diagnosis of TCM. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).

>> GO TO 3.

3.ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "C1B06" erased?

YES >> INSPECTION END

NO >> Replace ABS actuator and electric unit (control unit).

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CCS

U0100 LDP) ECM CAN CIR2

DTC Logic

INFOID:000000003867088

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U0100	LDP) ECM CAN CIR2	ABS actuator and electric unit (control unit) detected an error of CAN communication signal that was received from ECM.	Erase DTC with CONSULT-III	<ul style="list-style-type: none"> • ECM • ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of ABS actuator and electric unit (control unit) with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform the self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is the DTC "U0100" detected?

- YES >> Refer to [CCS-460, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003867089

1. PERFORM SELF-DIAGNOSIS OF ECM

Perform self-diagnosis of ECM with CONSULT-III.

Is any DTC detected?

- YES >> GO TO 2.
 NO >> GO TO 4.

2. ECM TROUBLE DIAGNOSIS

Perform trouble diagnosis of ECM. Refer to [EC-542, "DTC Index"](#) (VQ35HR) or [EC-1172, "DTC Index"](#) (VK50VE).

>> GO TO 3.

3. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U0100" erased?

- YES >> INSPECTION END
 NO >> Replace ABS actuator and electric unit (control unit).

4. PROVISIONAL REPLACEMENT OF ECM

Remove ECM. Install a normal ECM.

>> GO TO 5.

5. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U0100" erased?

- YES >> Replace ECM.

U0100 LDP) ECM CAN CIR2

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

NO >> Replace ABS actuator and electric unit (control unit).

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U0101 LDP) TCM CAM CAN CIR2

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0101 LDP) TCM CAM CAN CIR2

DTC Logic

INFOID:000000003867091

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U0101	LDP) TCM CAN CIR2	ABS actuator and electric unit (control unit) detected an error of CAN communication signal that was received from TCM.	Erase DTC with CONSULT-III	<ul style="list-style-type: none">TCMABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of ABS actuator and electric unit (control unit) with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

- Turn ignition switch ON and wait for 2 seconds or more.
- Perform the self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is the DTC "U0101" detected?

- YES >> Refer to [CCS-462, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003867091

1. PERFORM SELF-DIAGNOSIS OF TCM

Perform self-diagnosis of TCM with CONSULT-III.

Is any DTC detected?

- YES >> GO TO 2.
NO >> GO TO 4.

2. TCM TROUBLE DIAGNOSIS

Perform trouble diagnosis of TCM. Refer to [TM-166, "DTC Index"](#) (VQ35HR) or [TM-353, "DTC Index"](#) (VK50VE).

>> GO TO 3.

3. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U0101" erased?

- YES >> INSPECTION END
NO >> Replace ABS actuator and electric unit (control unit).

4. PROVISIONAL REPLACEMENT OF TCM

Remove TCM. Install a normal TCM.

>> GO TO 5.

5. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U0101" erased?

- YES >> Replace TCM.

U0101 LDP) TCM CAM CAN CIR2

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

NO >> Replace ABS actuator and electric unit (control unit).

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U0104 LDP) ICC CAM CAN CIR2

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0104 LDP) ICC CAM CAN CIR2

DTC Logic

INFOID:000000003867092

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U0104	LDP) ICC CAM CAN CIR2	ABS actuator and electric unit (control unit) detected an error of CAN communication signal that was received from ICC sensor integrated unit.	Erase DTC with CONSULT-III	<ul style="list-style-type: none">• ICC sensor integrated unit• ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of ABS actuator and electric unit (control unit) with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform the self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is the DTC "U0104" detected?

- YES >> Refer to [CCS-464, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003867093

1. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

Perform ICC sensor integrated unit self-diagnosis with CONSULT-III.

Is any DTC detected?

- YES >> GO TO 2.
NO >> GO TO 4.

2. ICC SENSOR INTEGRATED UNIT TROUBLE DIAGNOSIS

Perform trouble diagnosis of ICC sensor integrated unit. Refer to [CCS-158, "DTC Index"](#).

>> GO TO 3.

3. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U0104" erased?

- YES >> INSPECTION END
NO >> Replace ABS actuator and electric unit (control unit).

4. PROVISIONAL REPLACEMENT OF ICC SENSOR INTEGRATED UNIT

Remove ICC sensor integrated unit. Install a normal ICC sensor integrated unit.

>> GO TO 5.

5. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U0104" erased?

- YES >> Replace ICC sensor integrated unit.
NO >> Replace ABS actuator and electric unit (control unit).

U0405 LDP) ICC CAM CAN CIR1

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0405 LDP) ICC CAM CAN CIR1

DTC Logic

INFOID:000000003867094

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U0405	LDP) ICC CAM CAN CIR1	ABS actuator and electric unit (control unit) detected an error of CAN communication signal that was received from ICC sensor integrated unit.	Erase DTC with CONSULT-III	<ul style="list-style-type: none">• ICC sensor integrated unit• ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of ABS actuator and electric unit (control unit) with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform the self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is the DTC "U0405" detected?

- YES >> Refer to [CCS-465, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003867095

1. PERFORM SELF-DIAGNOSIS OF ICC SENSOR INTEGRATED UNIT

Perform ICC sensor integrated unit self-diagnosis with CONSULT-III.

Is any DTC detected?

- YES >> GO TO 2.
NO >> GO TO 4.

2. ICC SENSOR INTEGRATED UNIT TROUBLE DIAGNOSIS

Perform trouble diagnosis of ICC sensor integrated unit. Refer to [CCS-158, "DTC Index"](#).

>> GO TO 3.

3. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U0405" erased?

- YES >> INSPECTION END
NO >> Replace ABS actuator and electric unit (control unit).

4. PROVISIONAL REPLACEMENT OF ICC SENSOR INTEGRATED UNIT

Remove ICC sensor integrated unit. Install a normal ICC sensor integrated unit.

>> GO TO 5.

5. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U0405" erased?

- YES >> Replace ICC sensor integrated unit.
NO >> Replace ABS actuator and electric unit (control unit).

U1500 LDP) CAM CAN CIR1

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U1500 LDP) CAM CAN CIR1

DTC Logic

INFOID:000000003867096

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U1500	LDP) CAM CAN CIR1	ABS actuator and electric unit (control unit) detected an error of CAN communication signal that was received from the lane camera unit.	Erase DTC with CONSULT-III	<ul style="list-style-type: none">Lane camera unitABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of ABS actuator and electric unit (control unit) with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

- Turn ignition switch ON and wait for 2 seconds or more.
- Perform the self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is the DTC "U1500" detected?

- YES >> Refer to [CCS-466, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003867097

1. PERFORM SELF-DIAGNOSIS OF LANE CAMERA UNIT

Perform self-diagnosis of lane camera unit with CONSULT-III.

Is any DTC detected?

- YES >> GO TO 2.
NO >> GO TO 4.

2. LANE CAMERA UNIT TROUBLE DIAGNOSIS

Perform trouble diagnosis of the lane camera unit. Refer to [CCS-483, "DTC Index"](#).

>> GO TO 3.

3. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U1500" erased?

- YES >> INSPECTION END
NO >> Replace ABS actuator and electric unit (control unit).

4. PROVISIONAL REPLACEMENT OF LANE CAMERA UNIT

Remove the lane camera unit. Install a normal lane camera unit.

>> GO TO 5.

5. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U1500" erased?

- YES >> Replace the lane camera unit.
NO >> Replace ABS actuator and electric unit (control unit).

U1501 LDP) CAM CAN CIR2

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U1501 LDP) CAM CAN CIR2

DTC Logic

INFOID:000000003867098

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	DTC erase conditions	Possible cause
U1501	LDP) CAM CAN CIR2	ABS actuator and electric unit (control unit) detected an error of CAN communication signal that was received from the lane camera unit.	Erase DTC with CONSULT-III	<ul style="list-style-type: none">Lane camera unitABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of ABS actuator and electric unit (control unit) with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

- Turn ignition switch ON and wait for 2 seconds or more.
- Perform the self-diagnosis of ABS actuator and electric unit (control unit) with CONSULT-III.

Is the DTC "U1501" detected?

- YES >> Refer to [CCS-467, "Diagnosis Procedure"](#).
NO >> Refer to [GI-35, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000003867099

1. PERFORM SELF-DIAGNOSIS OF LANE CAMERA UNIT

Perform self-diagnosis of lane camera unit with CONSULT-III.

Is any DTC detected?

- YES >> GO TO 2.
NO >> GO TO 4.

2. LANE CAMERA UNIT TROUBLE DIAGNOSIS

Perform trouble diagnosis of the lane camera unit. Refer to [CCS-483, "DTC Index"](#).

>> GO TO 3.

3. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U1501" erased?

- YES >> INSPECTION END
NO >> Replace ABS actuator and electric unit (control unit).

4. PROVISIONAL REPLACEMENT OF LANE CAMERA UNIT

Remove lane camera unit. Install a normal lane camera unit.

>> GO TO 5.

5. ERASE DTC

Erase DTC memory of ABS actuator and electric unit (control unit) with self-diagnosis of CONSULT-III.

Is the DTC "U1501" erased?

- YES >> Replace the lane camera unit.
NO >> Replace ABS actuator and electric unit (control unit).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

POWER SUPPLY AND GROUND CIRCUIT

LANE CAMERA UNIT

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000003867100

1. FUSE INSPECTION

Check that the following fuses are not fusing.

Signal name	Connection position	Fuse No.	Capacity
Ignition power supply	FUSE BLOCK (J/B)	3	10 A

Is the fuse fusing?

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between the lane camera unit harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
Lane camera unit		Ignition switch	0 V
Connector	Terminal		
R8	1	OFF	
		ON	

Is the measurement value normal?

YES >> GO TO 3.

NO >> Check harness between lane camera unit and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the lane camera unit connector.
3. Check continuity between the lane camera unit harness connectors and ground.

Lane camera unit		Ground	Continuity
Connector	Terminal		
R8	6		Existed
	12		

Does continuity exist?

YES >> Power supply and ground circuit are normal.

NO >> Repair harness or connector.

LDW SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

LDW SWITCH CIRCUIT

Component Function Check

INFOID:000000003867101

1. CHECK LDW SWITCH SIGNAL BY CONSULT-III

CONSULT-III DATA MONITOR

- Turn the ignition switch ON.
- Select "LDW SW" of "LANE CAMERA" data monitor item.
- With operating the LDW switch, check the monitor status.

Monitor item	Condition		Monitor status
LDW SW	LDW switch	Pressed ⇔ Released	On ⇔ Off

Is the item status normal?

- YES >> LDW switch circuit is normal.
NO >> Refer to [CCS-469, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003867102

1. CHECK LDW SWITCH SIGNAL INPUT

- Turn the ignition switch ON.
- With operating the LDW switch, check the voltage between the lane camera unit harness connector and the ground.

Terminals		Condition	Voltage (Approx.)	
(+)	(-)			
Lane camera unit		LDW switch		
Connector	Terminal			
R8	9	Pressed		0 V
		Released		5 V

Is the measurement value normal?

- YES >> Replace the lane camera unit.
NO >> GO TO 2.

2. CHECK LDW SWITCH

- Turn ignition switch OFF.
- Remove LDW switch.
- Check LDW switch. Refer to [CCS-470, "Component Inspection"](#).

Is the LDW switch normal?

- YES >> GO TO 3.
NO >> Replace LDW switch.

3. CHECK LDW SWITCH GROUND CIRCUIT

Check continuity between LDW switch harness connector terminal and the ground.

LDW switch		Ground	Continuity
Connector	Terminal		
M29	6		Existed

Does continuity exist?

- YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK LDW SWITCH SIGNAL INPUT CIRCUIT FOR OPEN

- Disconnect the lane camera unit connector.

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LDW SWITCH CIRCUIT

[LDW & LDP]

< DTC/CIRCUIT DIAGNOSIS >

2. Check continuity between the lane camera unit harness connector and LDW switch harness connector.

Lane camera unit		LDW switch		Continuity
Connector	Terminal	Connector	Terminal	
R8	9	M29	7	Existed

Does continuity exist?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5.CHECK LDW SWITCH SIGNAL INPUT CIRCUIT FOR SHORT

Check continuity between the lane camera unit harness connector and ground.

Lane camera unit		Ground	Continuity
Connector	Terminal		
R8	9		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.

NO >> Replace the lane camera unit.

Component Inspection

INFOID:000000003867103

1.CHECK LDW SWITCH

Check continuity of LDW switch.

LDW switch		Condition	Continuity
Terminal		LDW switch	
6	7	Pressed	Existed
		Released	Not existed

Is the check result normal?

YES >> LDW switch is normal.

NO >> Replace LDW switch.

LDW ON INDICATOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

LDW ON INDICATOR CIRCUIT

Component Function Check

INFOID:000000003867104

1. CHECK LDW ON INDICATOR BY CONSULT-III

CONSULT-III ACTIVE TEST

1. Turn the ignition switch ON.
2. Select "LDW ON IND" of "LANE CAMERA" active test item.
3. With operating the test item, check the operation.

On : LDW ON indicator illuminates.

Off : LDW ON indicator is turned OFF.

Does the LDW ON indicator illuminate?

YES >> LDW ON indicator circuit is normal.

NO >> Refer to [CCS-471, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003867105

1. CHECK LDW ON INDICATOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect LDW switch connector.
3. Turn ignition switch ON.
4. Check voltage between LDW switch harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
LDW switch		Ground
Connector	Terminal	
M29	3	
		Battery voltage

Is the measurement value normal?

YES >> GO TO 2.

NO >> Check harness between fuse and LDW switch.

2. CHECK LDW ON INDICATOR SIGNAL FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect the lane camera unit harness connector.
3. Check continuity between the lane camera unit harness connector and LDW switch harness connector.

Lane camera unit		LDW switch		Continuity
Connector	Terminal	Connector	Terminal	
R8	4	M29	2	Existed

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK LDW ON INDICATOR SIGNAL CIRCUIT FOR SHORT

Check continuity between the lane camera unit harness connector and ground.

Lane camera unit		Ground	Continuity
Connector	Terminal		
R8	4		Not existed

Does continuity exist?

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LDW ON INDICATOR CIRCUIT

[LDW & LDP]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Repair the harnesses or connectors.
- NO >> GO TO 4.

4.CHECK LDW ON INDICATOR

1. Connect LDW switch connector.
2. Turn ignition switch ON.
3. Apply ground to LDW switch terminal 2.
4. Check condition of the LDW ON indicator.

Does LDW ON indicator illuminate?

- YES >> Replace the lane camera unit.
- NO >> Replace LDW switch.

LANE DEPARTURE WARNING BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

LANE DEPARTURE WARNING BUZZER CIRCUIT

Component Function Check

INFOID:000000003867106

1. CHECK LANE DEPARTURE WARNING BUZZER BY CONSULT-III

CONSULT-III ACTIVE TEST

1. Turn the ignition switch ON.
2. Select "BUZZER DRIVE" of "LANE CAMERA" active test item.
3. With operating the test item, check the operation.

On : Lane departure warning buzzer is activated.

Off : Lane departure warning buzzer is not activated.

Is the lane departure warning buzzer activated?

YES >> Lane departure warning buzzer circuit is normal.

NO >> Refer to [CCS-473, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003867107

1. CHECK LANE DEPARTURE WARNING BUZZER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the lane departure warning buzzer connector.
3. Turn ignition switch ON.
4. Check voltage between the lane departure warning buzzer harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
Lane departure warning buzzer		Ground
Connector	Terminal	
M45	1	
		Battery voltage

Is the measurement value normal?

YES >> GO TO 2.

NO >> Check harness between fuse and lane departure warning buzzer.

2. CHECK LANE DEPARTURE WARNING BUZZER GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between lane departure warning buzzer harness connector and ground.

Lane departure warning buzzer		Ground	Continuity
Connector	Terminal		
M45	3		Existed

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK LANE DEPARTURE WARNING BUZZER SIGNAL CIRCUIT FOR OPEN

1. Disconnect the lane camera unit connector.
2. Check continuity between the lane camera unit harness connector and lane departure warning buzzer harness connector.

Lane camera unit		Lane departure warning buzzer		Continuity
Connector	Terminal	Connector	Terminal	
R8	3	M45	2	Existed

LANE DEPARTURE WARNING BUZZER CIRCUIT

[LDW & LDP]

< DTC/CIRCUIT DIAGNOSIS >

Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4. CHECK LANE DEPARTURE WARNING BUZZER SIGNAL CIRCUIT FOR SHORT

Check continuity between the lane camera unit harness connector and ground.

Lane camera unit		Ground	Continuity
Connector	Terminal		
R8	3		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.

NO >> GO TO 5.

5. CHECK LANE DEPARTURE WARNING BUZZER OPERATION

1. Connect lane departure warning buzzer connector.
2. Turn ignition switch ON.
3. Apply ground to lane departure warning buzzer terminal 2.
4. Check condition of the lane departure warning buzzer.

Does lane departure warning buzzer sound?

YES >> Replace the lane camera unit.

NO >> Replace lane departure warning buzzer.

LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

ECU DIAGNOSIS INFORMATION

LANE CAMERA UNIT

Reference Value

INFOID:000000003867108

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item	Condition	Value/Status
LDW SW	LDW switch (FCW switch) is ON. (LDW ON indicator illuminates.)	On
	LDW switch (FCW switch) is OFF. (LDW ON indicator OFF.)	Off
LDW ON LAMP	LDW ON indicator (FCW ON indicator) illuminates.	On
	LDW ON indicator (FCW ON indicator) OFF	Off
LDP ON IND	LDP ON indicator lamp illuminates.	On
	LDP ON indicator lamp OFF	Off
LANE DPRT W/L	Lane departure warning lamp illuminates.	On
	Lane departure warning lamp OFF	Off
BUZZER OUTPUT	Lane departure warning buzzer is sounding.	On
	Lane departure warning buzzer is not sounding.	Off
LC INACCURAT	Lane camera malfunction	On
	Lane camera normal	Off
VHCL SPD SE	While driving	Approximately equivalent to speedometer reading
TURN SIGNAL	Turn signal lamp LH and RH blinking.	LH/RH
	Turn signal lamp LH blinking.	LH
	Turn signal lamp RH blinking.	RH
	Turn signal lamps OFF.	Off
LANE DETCT LH	Left side lane marker is detected.	On
	Left side lane marker is not detected.	Off
LANE DETCT RH	Right side lane marker is detected.	On
	Right side lane marker is not detected.	Off
CROSS LANE LH	The vehicle is crossing left side lane marker.	On
	The vehicle is not crossing left side lane marker.	Off
CROSS LANE RH	The vehicle is crossing right side lane marker.	On
	The vehicle is not crossing right side lane marker.	Off
WARN LANE LH	Warning for left side lane.	On
	Not warning for left side lane.	Off
WARN LANE RH	Warning for right side lane.	On
	Not warning for right side lane.	Off
VALID POS LH	Lateral position for left side lane marker is valid.	VLD
	Lateral position for left side lane marker is invalid.	INVLD
VALID POS RH	Lateral position for right side lane marker is valid.	VLD
	Lateral position for right side lane marker is invalid.	INVLD
AIMING DONE	Camera aiming is completed.	OK
	Camera aiming is not adjusted.	NG
AIMING RESULT	Camera aiming is completed.	OK
	Camera aiming is not completed.	NOK

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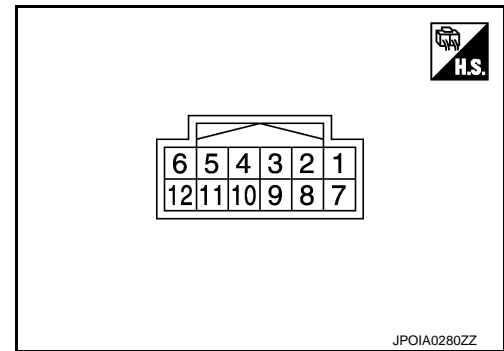
LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor Item	Condition	Value/Status
XOFFSET	Camera aiming is completed.	Approx. 180 pixel
CHK AIM YAW	NOTE: The item is indicated, but not used.	—
CHK AIM ROLL	NOTE: The item is indicated, but not used.	—
CHK AIM PITCH	NOTE: The item is indicated, but not used.	—
FCTRY AIM YAW	Camera aiming is not completed.	+12.0 deg
	Camera aiming is completed.	0 ± 5.0 deg
FCTRY AIM ROL	Camera aiming is not completed.	0.0 deg
	Camera aiming is completed.	0 ± 5.0 deg
FCTRY AIM PIT	Camera aiming is not completed.	+12.0 deg
	Camera aiming is completed.	0 ± 5.0 deg

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (Y)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
3 (R)	Ground	Lane departure warning buzzer	Output	Lane departure warning buzzer	Sounding 0 V
				Not sounding	12 V
4 (SB)	Ground	LDW ON indicator	Output	LDW ON indicator	Illuminated 0 V
				OFF	12 V
5 (P)	Ground	CAN-L	—	—	—
6 (B)	Ground	Ground	—	—	0 V
9 (V)	Ground	LDW switch	Input	LDW switch	Pressed 0 V
				Released	5 V
10 (L)	Ground	CAN-H	—	—	—
12 (B)	Ground	Ground	—	—	0 V

LANE CAMERA UNIT

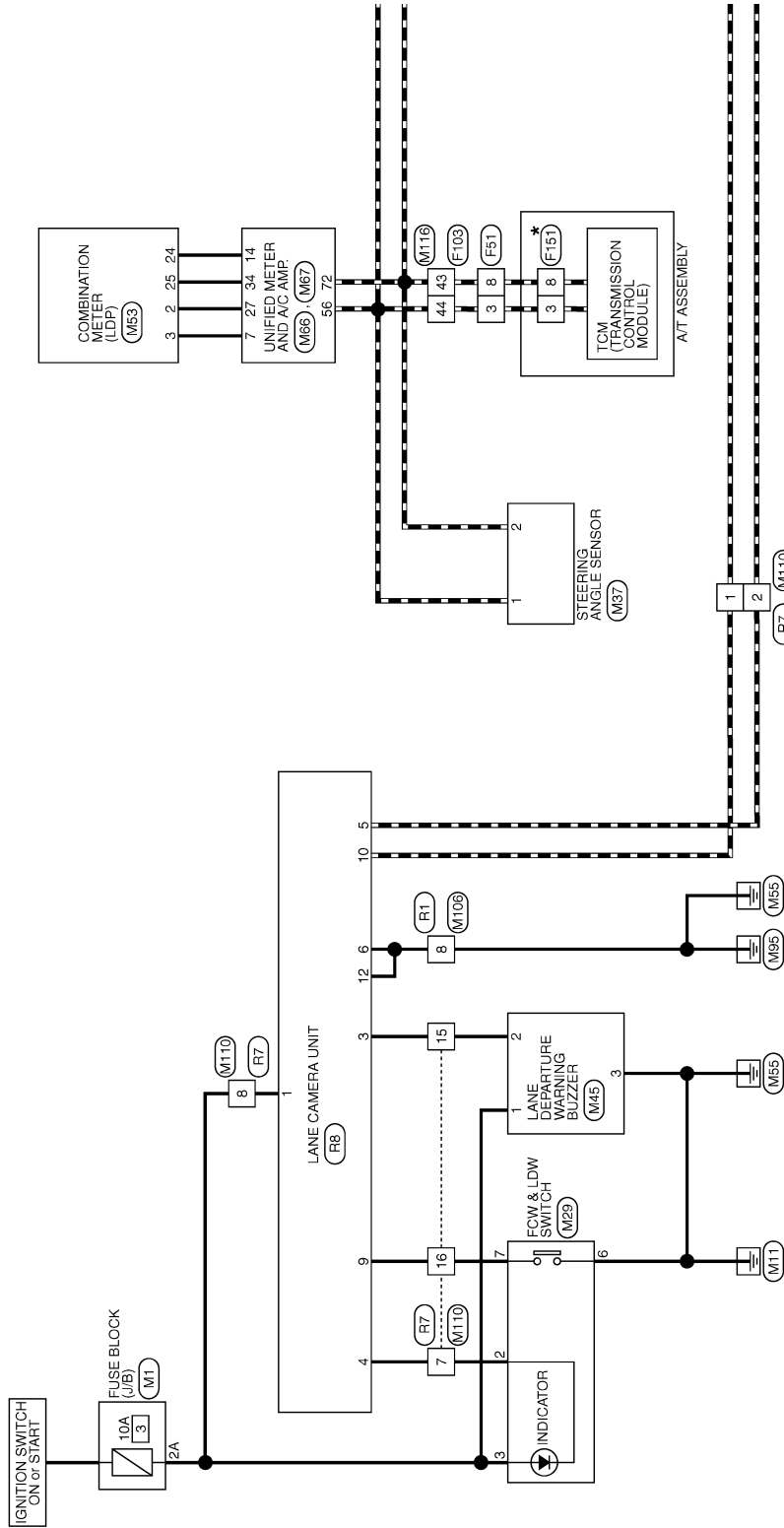
< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Wiring Diagram - LDW & LDP -

INFOID:000000003867109

LANE DEPARTURE PREVENTION



*: This connector is not shown in "Harness Layout".

2008/03/04

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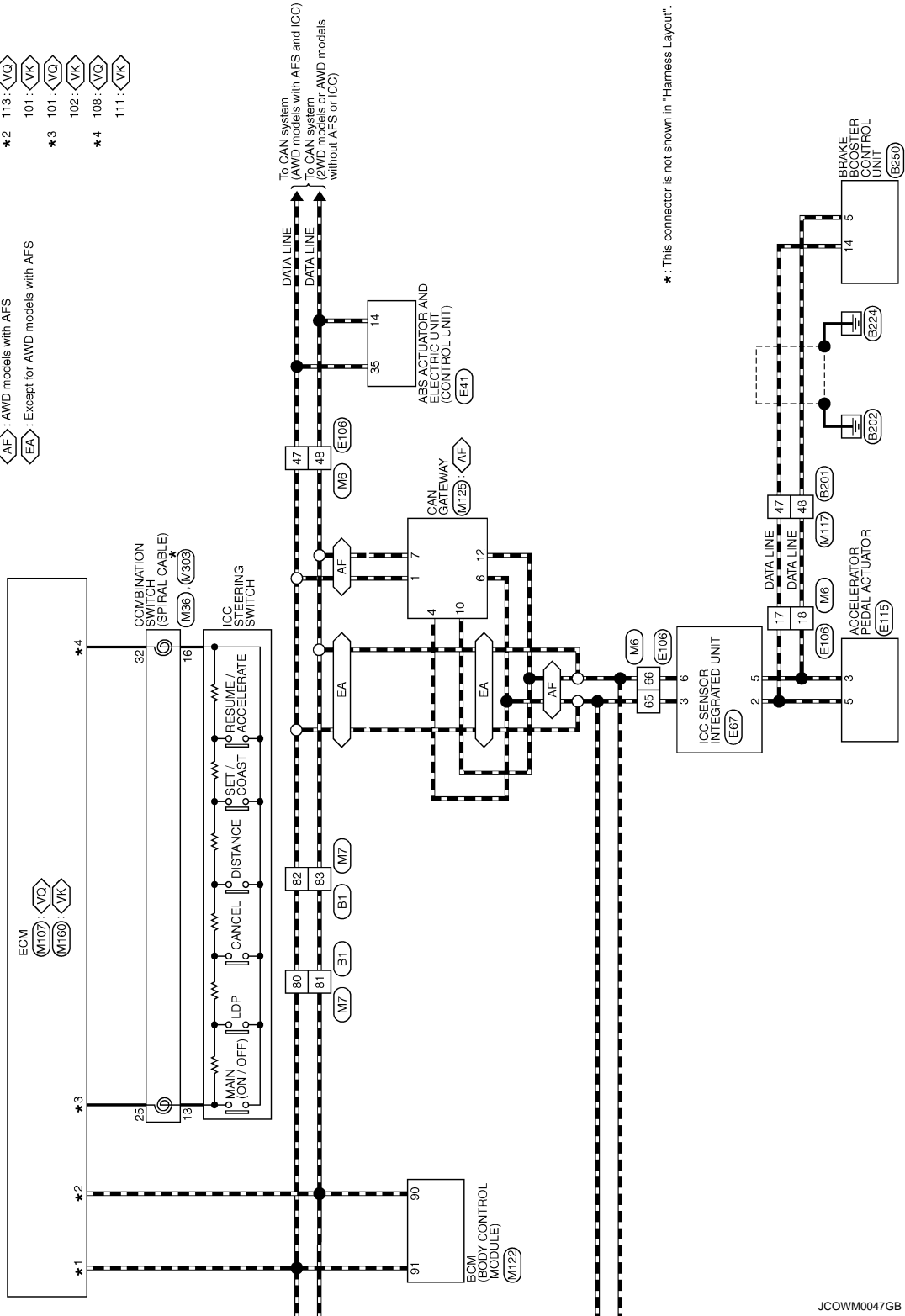
LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

- ★1 114: <VQ>
105: <VK>
- ★2 113: <VQ>
101: <VK>
- ★3 101: <VQ>
102: <VK>
- ★4 108: <VO>
111: <VK>

- <VQ> : With VQ engine
- <VK> : With VK engine
- <AF> : AWD models with AFS
- <EA> : Except for AWD models with AFS



★: This connector is not shown in "Harness Layout".

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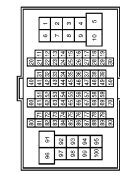
LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

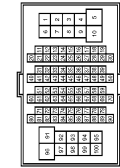
LANE DEPARTURE PREVENTION

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
80	L	-
81	P	-
82	L	-
83	P	-

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



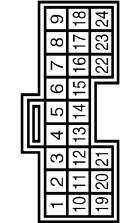
Terminal No.	Color of Wire	Signal Name [Specification]
47	L	- [With IGC]
48	P	- [With IGC]

Connector No.	EB7
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	RS06FB-PR



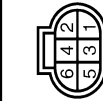
Terminal No.	Color of Wire	Signal Name [Specification]
2	L	ITS COMM-H
3	G	CAN-H
5	P	ITS COMM-L
6	BR	CAN-L

Connector No.	B230
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FW



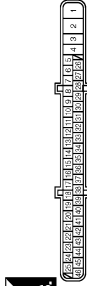
Terminal No.	Color of Wire	Signal Name [Specification]
5	P	ITS COMM-L
14	L	ITS COMM-H

Connector No.	E115
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	KD206FB



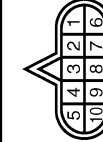
Terminal No.	Color of Wire	Signal Name [Specification]
3	P	ITS COMM-L
5	L	ITS COMM-H

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	EA042FB-AH24-LH



Terminal No.	Color of Wire	Signal Name [Specification]
14	P	CAN-L
35	L	CAN-H

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG-DGY



Terminal No.	Color of Wire	Signal Name [Specification]
3	L	-
8	P	-

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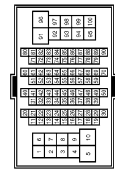
LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

LANE DEPARTURE PREVENTION

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



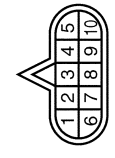
Terminal No.	Color of Wire	Signal Name [Specification]
17	L	-
18	P	-
47	L	-
48	P	-
65	L	-
66	P	-

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS68FW-M2



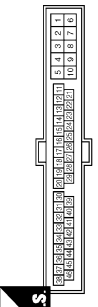
Terminal No.	Color of Wire	Signal Name [Specification]
2A	G	-

Connector No.	F151
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



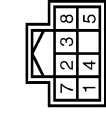
Terminal No.	Color of Wire	Signal Name [Specification]
3	R	CAN-H
8	BR	CAN-L

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK68FW-NS10



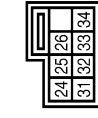
Terminal No.	Color of Wire	Signal Name [Specification]
43	P	-
44	L	-

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH



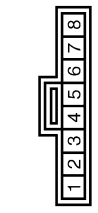
Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L

Connector No.	M36
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-1V



Terminal No.	Color of Wire	Signal Name [Specification]
23	SB	-
32	V	-

Connector No.	M29
Connector Name	FCW & LDW SWITCH
Connector Type	TK08FGY



Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	-
3	Y	-
6	B	-
7	V	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
80	L	-
81	P	-
82	L	-
83	P	-

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LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

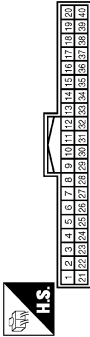
LANE DEPARTURE PREVENTION

Connector No.	M45
Connector Name	LANE DEPARTURE WARNING BUZZER
Connector Type	NS4AFB-CS



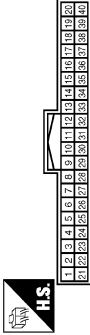
Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	-
2	R	-
3	B	-

Connector No.	M63
Connector Name	COMBINATION METER
Connector Type	TH4GFW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	LG	COMM (METER->AMP.)
3	GR	COMM (AMP->METER)
24	BR	COMM (LCD->AMP.)
25	Y	COMM (AMP->LCD)

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH4GFW-NH



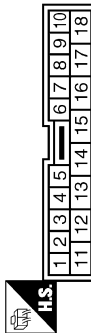
Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	COMM (AMP->METER)
14	BR	COMM (LCD->AMP.)
27	LG	COMM (METER->AMP.)
34	Y	COMM (AMP->LCD)

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH4GFW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
56	L	CAN-H
72	P	CAN-L

Connector No.	M106
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS3

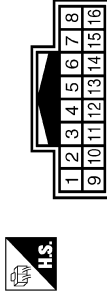


Connector No.	M107
Connector Name	ECM (WITH VQ ENGINE)
Connector Type	RH24FGY-RZ6-R-LH-Z



Terminal No.	Color of Wire	Signal Name [Specification]
8	B	-

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Type	TH1BMW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	P	-
7	SB	-
8	LG	-
15	R	-
16	V	-

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK3BMW-NS10



Terminal No.	Color of Wire	Signal Name [Specification]
43	P	-
44	L	-

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< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Connector No.	Color of Wire	Signal Name [Specification]
M117	WIRE TO WIRE	
TH80WV-CS1(F-TM4)		
47	L	- [With ICC]
48	P	- [With ICC]
M118	WIRE TO WIRE	
TK08FGY		
20	R	18
19	R	17
18	R	16
17	R	15
16	R	14
15	R	13
M119	WIRE TO WIRE	
TK10FW-NS5		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M120	WIRE TO WIRE	
TK10FW-NH		
90	P	CAN-L
91	L	CAN-H
M121	WIRE TO WIRE	
TH12FW-NH		
1	L	CAN-H
4	L	CAN-H
6	L	CAN-H
7	P	CAN-L
10	P	CAN-L
12	P	CAN-L
M122	BCM (BODY CONTROL MODULE)	
TH40FB-NH		
11	P	18
10	P	17
9	P	16
8	P	15
7	P	14
6	P	13
5	P	12
4	P	11
3	P	10
2	P	9
1	P	8
M123	CAN GATEWAY	
TH12FW-NH		
1	L	CAN-H
4	L	CAN-H
6	L	CAN-H
7	P	CAN-L
10	P	CAN-L
12	P	CAN-L
M124	ECM (WITH VK ENGINE)	
FR24FGY-R2P-R-LH-Z		
128	P	128
127	P	127
126	P	126
125	P	125
124	P	124
123	P	123
122	P	122
121	P	121
120	P	120
119	P	119
118	P	118
117	P	117
116	P	116
115	P	115
114	P	114
113	P	113
112	P	112
111	P	111
110	P	110
109	P	109
108	P	108
107	P	107
106	P	106
105	P	105
104	P	104
103	P	103
102	P	102
101	P	101
M125	LANE CAMERA UNIT	
TH12FW-NH		
8	R	16
7	R	15
6	R	14
5	R	13
4	R	12
3	R	11
2	R	10
1	R	9
M126	LANE CAMERA UNIT	
TH12FW-NH		
6	R	12
5	R	11
4	R	10
3	R	9
2	R	8
1	R	7
M160	ECM (WITH VK ENGINE)	
FR24FGY-R2P-R-LH-Z		
128	P	128
127	P	127
126	P	126
125	P	125
124	P	124
123	P	123
122	P	122
121	P	121
120	P	120
119	P	119
118	P	118
117	P	117
116	P	116
115	P	115
114	P	114
113	P	113
112	P	112
111	P	111
110	P	110
109	P	109
108	P	108
107	P	107
106	P	106
105	P	105
104	P	104
103	P	103
102	P	102
101	P	101
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
20	R	18
19	R	17
18	R	16
17	R	15
16	R	14
15	R	13
14	R	12
13	R	11
12	R	10
11	R	9
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	7
8	R	6
7	R	5
6	R	4
5	R	3
4	R	2
3	R	1
2	R	18
1	R	17
M303	COMBINATION SWITCH (SPIRAL CABLE)	
TK08FGY		
10	R	8
9	R	

LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

- If the vehicle is parked in direct sunlight under high temperature conditions [approximately over 104°F (40°C)] and then started, the system may sound a buzzer and cancel automatically. In this case LDW ON indicator will blink.
- When the interior temperature is reduced, LDW ON indicator is turned ON.

When using LDP

- If the vehicle is parked in direct sunlight under high temperature conditions [approximately over 104°F (40°C)] and then started, the system may sound a buzzer and cancel automatically. In this case LDP ON indicator lamp will blink.
- When the interior temperature is reduced, LDP ON indicator lamp is turned ON.

DTC Inspection Priority Chart

INFOID:000000003867111

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • U0122: VDC CAN CIR1(LDP) • U0416: VDC CAN CIR2(LDP)
3	C1B00: CAMERA UNIT MALF
4	<ul style="list-style-type: none"> • C1B01: CAM AIMING INCMP • C1B02: VHCL SPD DATA MALF • C1B03: ABNRML TEMP DETECT • C1B07: ABS DIAGNOSIS

DTC Index

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DTC		Lane departure warning lamp	LDW ON indicator	LDP ON indicator lamp	Fail-safe	Reference page
C1B00	CAMERA UNIT MALF	ON	—	—	×	CCS-445
C1B01	CAM AIMING INCMP	Blink	—	—	×	CCS-446
C1B02	VHCL SPD DATA MALF	ON	—	—	×	CCS-447
C1B03	ABNRML TEMP DETECT	—	Blink (When using LDW)	Blink (When using LDP)	×	CCS-448
C1B07	ABS DIAGNOSIS	ON	—	—	×	CCS-449
U1000	CAN COMM CIRCUIT	ON	—	—	×	CCS-450
U1010	CONTROL UNIT (CAN)	ON	—	—	×	CCS-451
U0122	VDC CAN CIR1 (LDP)	ON	—	—	×	CCS-452
U0416	VDC CAN CIR2 (LDP)	ON	—	—	×	CCS-454

×: Applicable

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Reference Value

INFOID:000000003867130

VALUES ON THE DIAGNOSIS TOOL

CAUTION:

The display shows the control unit calculation data, so a normal value might be displayed even in the event the output circuit (harness) is open or short-circuited.

Monitor item	Display content	Data monitor	
		Condition	Reference value in normal operation
FR LH SENSOR	Wheel speed	Vehicle stopped	0 [km/h (MPH)]
		Vehicle running (Note 1)	Nearly matches the speedometer display ($\pm 10\%$ or less)
FR RH SENSOR	Wheel speed	Vehicle stopped	0 [km/h (MPH)]
		Vehicle running (Note 1)	Nearly matches the speedometer display ($\pm 10\%$ or less)
RR LH SENSOR	Wheel speed	Vehicle stopped	0 [km/h (MPH)]
		Vehicle running (Note 1)	Nearly matches the speedometer display ($\pm 10\%$ or less)
RR RH SENSOR	Wheel speed	Vehicle stopped	0 [km/h (MPH)]
		Vehicle running (Note 1)	Nearly matches the speedometer display ($\pm 10\%$ or less)
STOP LAMP SW	Stop lamp switch signal status	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
BATTERY VOLT	Battery voltage supplied to the ABS actuator and electric unit (control unit)	Ignition switch ON	10 – 16 V
SLCT LVR POSI	A/T selector lever position	P position R position N position D position	P R N D
YAW RATE SEN	Yaw rate detected by yaw rate/side G sensor	Vehicle stopped	Approx. 0 d/s
		Vehicle turning right	Negative value
		Vehicle turning left	Positive value
ACCEL POS SIG	Throttle actuator opening/closing is displayed (linked with accelerator pedal)	Accelerator pedal not depressed (ignition switch is ON)	0 %
		Depress accelerator pedal (ignition switch is ON)	0 - 100 %
SIDE G-SENSOR	Transverse G detected by side G sensor	Vehicle stopped	Approx. 0 m/s ²
		Vehicle turning right	Negative value
		Vehicle turning left	Positive value
STR ANGLE SIG	Steering angle detected by steering angle sensor	Driving straight	$\pm 2.5^\circ$
		Turn 90° to right	Approx. +90°
		Turn 90° to left	Approx. -90°
PRESS SENSOR	Brake fluid pressure detected by pressure sensor	With ignition switch turned ON and brake pedal released	Approx. 0 bar
		With ignition switch turned ON and brake pedal depressed	Approx. 0 to 300 bar

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item	Display content	Data monitor	
		Condition	Reference value in normal operation
ENGINE RPM	With engine running	With engine stopped	0 [tr/min (rpm)]
		Engine running	Almost in accordance with tachometer display
OFF SW	VDC OFF switch signal status	When VDC OFF switch ON (VDC OFF indicator lamp ON)	On
		When VDC OFF switch OFF (VDC OFF indicator lamp OFF)	Off
FLUID LEV SW	Brake fluid level switch signal status	When brake fluid level switch ON	On
		When brake fluid level switch OFF	Off
PARK BRAKE SW	Parking brake switch signal status	Parking brake switch is active	On
		Parking brake switch is inactive	Off
FR RH IN SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
FR RH OUT SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
FR LH IN SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
FR LH OUT SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
RR RH IN SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
RR RH OUT SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
RR LH IN SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off
RR LH OUT SOL	Operation status of each solenoid valve	Actuator (solenoid valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When the actuator (solenoid valve) is not active and actuator relay is active (ignition switch ON)	Off

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ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item	Display content	Data monitor	
		Condition	Reference value in normal operation
MOTOR RELAY	Motor and motor relay operation	When the motor relay and motor are operating	On
		When the motor relay and motor are not operating	Off
ACTUATOR RLY (Note 2)	Actuator relay operation	When the actuator relay is operating	On
		When the actuator relay is not operating	Off
ABS WARN LAMP	ABS warning lamp (Note 3)	When ABS warning lamp is ON	On
		When ABS warning lamp is OFF	Off
OFF LAMP	VDC OFF indicator lamp (Note 3)	When VDC OFF indicator lamp is ON	On
		When VDC OFF indicator lamp is OFF	Off
SLIP LAMP	SLIP indicator lamp (Note 3)	When SLIP indicator lamp is ON	On
		When SLIP indicator lamp is OFF	Off
EBD SIGNAL	EBD operation	EBD is active	On
		EBD is inactive	Off
ABS SIGNAL	ABS operation	ABS is active	On
		ABS is inactive	Off
TCS SIGNAL	TCS operation	TCS is active	On
		TCS is inactive	Off
VDC SIGNAL	VDC operation	VDC is active	On
		VDC is inactive	Off
ABS FAIL SIG	ABS fail-safe signal	In ABS fail-safe	On
		ABS is normal	Off
TCS FAIL SIG	TCS fail-safe signal	In TCS fail-safe	On
		TCS is normal	Off
VDC FAIL SIG	VDC fail-safe signal	In VDC fail-safe	On
		VDC is normal	Off
CRANKING SIG	Crank operation	Crank is active	On
		Crank is inactive	Off
USV [FL-RR] (Note 2)	VDC switch-over valve	When actuator (switch-over valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When actuator (switch-over valve) is not active and actuator relay is active (ignition switch ON)	Off
USV [FR-RL] (Note 2)	VDC switch-over valve	When actuator (switch-over valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When actuator (switch-over valve) is not active and actuator relay is active (ignition switch ON)	Off
HSV [FL-RR] (Note 2)	VDC switch-over valve	When actuator (switch-over valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When actuator (switch-over valve) is not active and actuator relay is active (ignition switch ON)	Off

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item	Display content	Data monitor	
		Condition	Reference value in normal operation
HSV [FR-RL] (Note 2)	VDC switch-over valve	When actuator (switch-over valve) is active ("ACTIVE TEST" with CONSULT-III)	On
		When actuator (switch-over valve) is not active and actuator relay is active (ignition switch ON)	Off
BST OPER SIG	Booster operation signal	Booster is active	On
		Booster is inactive	Off
V/R OUTPUT (Note 2)	Solenoid valve relay activated	When the solenoid valve relay is active (When ignition switch OFF)	On
		When the solenoid valve relay is not active (in the fail-safe mode)	Off
M/R OUTPUT	Actuator motor and motor relay activated	When the actuator motor and motor relay are active ("ACTIVE TEST" with CONSULT-III)	On
		When the actuator motor and motor relay are inactive	Off
LDP) APP SEN (Note 4)	Accelerator pedal position sensor status	Accelerator pedal is not depressed (Ignition switch ON)	0 %
		Depress accelerator pedal (Ignition switch ON)	0 - 100 %
LDP)YAW ORDER (Note 4) (Note 5)	Calculated target yaw moment status	LDP is controlling to right side deviation	Negative value
		LDP is controlling to left side deviation	Positive value
LDP) SHIFT POSITION (Note 4)	Shift position	Shift position is not received	Off
		Selector lever position	P/R/N/D
		When using manual mode	MM 1st – MM 7th
LDP) ICC MAIN SW (Note 4)	ICC main switch	ICC main switch is ON	On
		ICC main switch is OFF	Off
LDP) LDP ON SW (Note 4)	LDP ON switch	LDP ON switch is ON	On
		LDP ON switch is OFF	Off
LDP) WIPER SIGNAL (Note 4)	Front wiper operation	Front wiper is OFF.	Stop
		Front wiper stops at fail-safe operation	PRTCT
		Front wiper INT is operating.	1low
		Front wiper LO is operating.	Low
		Front wiper HI is operating.	High
LDP) TURN SIGNAL (Note 4)	Turn signal operation	Turn signal is OFF.	Off
		Turn signal lamp RH is blinking.	LH
		Turn signal lamp LH is blinking.	RH
		Turn signal lamp LH and RH are blinking.	LH&RH
LDP) STOP LMP SW (Note 4)	Stop lamp switch signal status	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
LDP) BRAKE SW (Note 4)	Brake switch signal status	When brake pedal is not depressed	On
		When brake pedal is depressed	Off
LDP) WARN REQ (Note 4) (Note 5)	Lane departure warning request status	Lane departure warning is operating. (When using LDP)	On
		Lane departure warning is not operating.	Off

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ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item	Display content	Data monitor	
		Condition	Reference value in normal operation
LDP)WARN CONTROL (Note 4) (Note 5)	Warning main controller status	When using LDP	On
		When using LDW	Off
LDP)REDY SIGNAL (Note 4) (Note 5)	LDP ready status	LDP control is ready.	On
		LDP control is not ready.	Off
LDP)STATUS SIGNAL (Note 4) (Note 5)	LDP control status	LDP control is standby.	STANDBY
		Lane departure warning is operating. (When using LDP)	WARN
		LDP control is stopped.	MASK
		LDP control is OFF.	Off
LDP) LDW SW (Note 4)	LDW switch condition	LDW switch is ON (LDW ON indicator is ON)	On
		LDW switch is OFF (LDW ON indicator is OFF)	Off
LDP)CAMERA LOST (Note 4) (Note 5)	Lane marker detected condition	Both side lane markers are detected.	Detect
		Deviate side lane marker is lost.	Deviate
		Both side lane markers are lost.	Both
LDP)LANE UNCLEAR (Note 4) (Note 5)	Lane marker condition	Lane marker is unclear.	On
		Lane marker is clear.	Off

NOTE:

- 1: Confirm tire pressure is normal.
- 2: A brief moment of On/Off condition occurs every 20 seconds after ignition switch turned ON. This is not malfunction because it is an operation for checking.
- 3: On and off timing for warning lamp and indicator lamp.
 - ABS warning lamp: Refer to [BRC-107, "Description"](#).
 - Brake warning lamp: Refer to [BRC-108, "Description"](#).
 - VDC OFF indicator lamp: Refer to [BRC-109, "Description"](#).
 - SLIP indicator lamp: Refer to [BRC-110, "Description"](#).
 - Lane departure warning lamp: Refer to [CCS-428, "System Description"](#).
- 4: With LDP models.
- 5: The item displayed on "SPECIFIC DATA MONITOR" in "Specific Function".

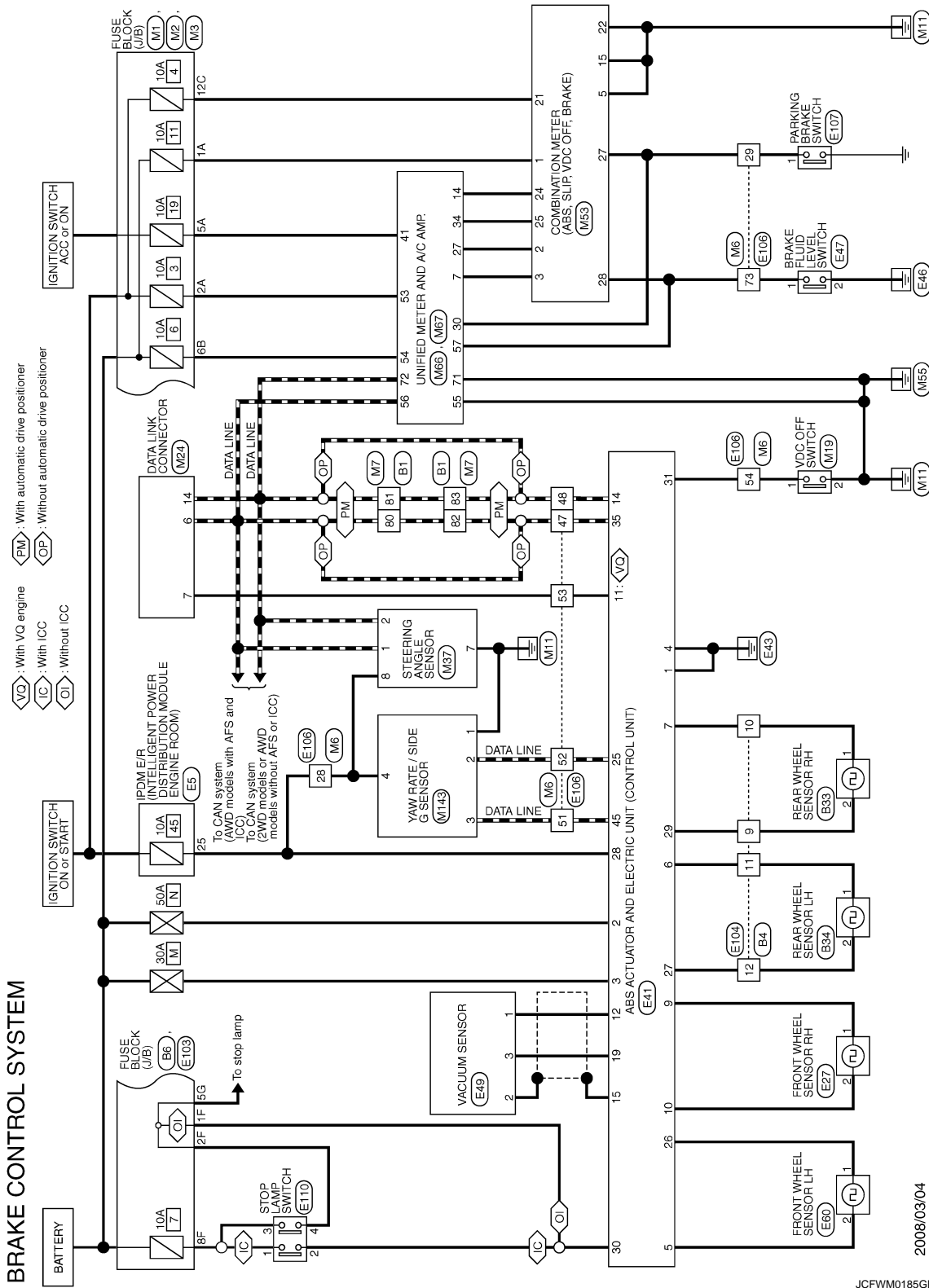
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Wiring Diagram - BRAKE CONTROL SYSTEM -

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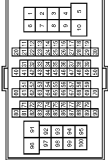

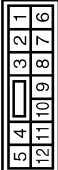





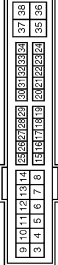






ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

BRAKE CONTROL SYSTEM

<table border="1"> <tr> <td>Connector No.</td> <td>B1</td> </tr> <tr> <td>Connector Name</td> <td>WIRE TO WIRE</td> </tr> <tr> <td>Connector Type</td> <td>TH80FW-CS16-TM4</td> </tr> </table>  	Connector No.	B1	Connector Name	WIRE TO WIRE	Connector Type	TH80FW-CS16-TM4	<table border="1"> <tr> <td>Terminal No.</td> <td>Color of Wire</td> <td>Signal Name [Specification]</td> </tr> <tr> <td>80</td> <td>L</td> <td></td> </tr> <tr> <td>81</td> <td>P</td> <td></td> </tr> <tr> <td>82</td> <td>L</td> <td></td> </tr> <tr> <td>83</td> <td>P</td> <td></td> </tr> </table>	Terminal No.	Color of Wire	Signal Name [Specification]	80	L		81	P		82	L		83	P	
Connector No.	B1																					
Connector Name	WIRE TO WIRE																					
Connector Type	TH80FW-CS16-TM4																					
Terminal No.	Color of Wire	Signal Name [Specification]																				
80	L																					
81	P																					
82	L																					
83	P																					
<table border="1"> <tr> <td>Connector No.</td> <td>B4</td> </tr> <tr> <td>Connector Name</td> <td>WIRE TO WIRE</td> </tr> <tr> <td>Connector Type</td> <td>NS12FW-CS</td> </tr> </table>  	Connector No.	B4	Connector Name	WIRE TO WIRE	Connector Type	NS12FW-CS	<table border="1"> <tr> <td>Terminal No.</td> <td>Color of Wire</td> <td>Signal Name [Specification]</td> </tr> <tr> <td>9</td> <td>LG</td> <td></td> </tr> <tr> <td>10</td> <td>BR</td> <td></td> </tr> <tr> <td>11</td> <td>O</td> <td></td> </tr> <tr> <td>12</td> <td>GR</td> <td></td> </tr> </table>	Terminal No.	Color of Wire	Signal Name [Specification]	9	LG		10	BR		11	O		12	GR	
Connector No.	B4																					
Connector Name	WIRE TO WIRE																					
Connector Type	NS12FW-CS																					
Terminal No.	Color of Wire	Signal Name [Specification]																				
9	LG																					
10	BR																					
11	O																					
12	GR																					
<table border="1"> <tr> <td>Connector No.</td> <td>B6</td> </tr> <tr> <td>Connector Name</td> <td>FUSE BLOCK (J/B)</td> </tr> <tr> <td>Connector Type</td> <td>NS12FBR-CS</td> </tr> </table>  	Connector No.	B6	Connector Name	FUSE BLOCK (J/B)	Connector Type	NS12FBR-CS	<table border="1"> <tr> <td>Terminal No.</td> <td>Color of Wire</td> <td>Signal Name [Specification]</td> </tr> <tr> <td>5G</td> <td>LG</td> <td></td> </tr> </table>	Terminal No.	Color of Wire	Signal Name [Specification]	5G	LG										
Connector No.	B6																					
Connector Name	FUSE BLOCK (J/B)																					
Connector Type	NS12FBR-CS																					
Terminal No.	Color of Wire	Signal Name [Specification]																				
5G	LG																					
<table border="1"> <tr> <td>Connector No.</td> <td>B33</td> </tr> <tr> <td>Connector Name</td> <td>REAR WHEEL SENSOR RH</td> </tr> <tr> <td>Connector Type</td> <td>AAZ02FB1</td> </tr> </table>  	Connector No.	B33	Connector Name	REAR WHEEL SENSOR RH	Connector Type	AAZ02FB1	<table border="1"> <tr> <td>Terminal No.</td> <td>Color of Wire</td> <td>Signal Name [Specification]</td> </tr> <tr> <td>1</td> <td>BR</td> <td></td> </tr> <tr> <td>2</td> <td>LG</td> <td></td> </tr> </table>	Terminal No.	Color of Wire	Signal Name [Specification]	1	BR		2	LG							
Connector No.	B33																					
Connector Name	REAR WHEEL SENSOR RH																					
Connector Type	AAZ02FB1																					
Terminal No.	Color of Wire	Signal Name [Specification]																				
1	BR																					
2	LG																					
<table border="1"> <tr> <td>Connector No.</td> <td>E5</td> </tr> <tr> <td>Connector Name</td> <td>IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)</td> </tr> <tr> <td>Connector Type</td> <td>TH20FW-CS12-IM-TV</td> </tr> </table>  	Connector No.	E5	Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	Connector Type	TH20FW-CS12-IM-TV	<table border="1"> <tr> <td>Terminal No.</td> <td>Color of Wire</td> <td>Signal Name [Specification]</td> </tr> <tr> <td>25</td> <td>G</td> <td></td> </tr> </table>	Terminal No.	Color of Wire	Signal Name [Specification]	25	G										
Connector No.	E5																					
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)																					
Connector Type	TH20FW-CS12-IM-TV																					
Terminal No.	Color of Wire	Signal Name [Specification]																				
25	G																					
<table border="1"> <tr> <td>Connector No.</td> <td>B34</td> </tr> <tr> <td>Connector Name</td> <td>REAR WHEEL SENSOR LH</td> </tr> <tr> <td>Connector Type</td> <td>AAZ02FB2</td> </tr> </table>  	Connector No.	B34	Connector Name	REAR WHEEL SENSOR LH	Connector Type	AAZ02FB2	<table border="1"> <tr> <td>Terminal No.</td> <td>Color of Wire</td> <td>Signal Name [Specification]</td> </tr> <tr> <td>1</td> <td>O</td> <td></td> </tr> <tr> <td>2</td> <td>GR</td> <td></td> </tr> </table>	Terminal No.	Color of Wire	Signal Name [Specification]	1	O		2	GR							
Connector No.	B34																					
Connector Name	REAR WHEEL SENSOR LH																					
Connector Type	AAZ02FB2																					
Terminal No.	Color of Wire	Signal Name [Specification]																				
1	O																					
2	GR																					
<table border="1"> <tr> <td>Connector No.</td> <td>E27</td> </tr> <tr> <td>Connector Name</td> <td>FRONT WHEEL SENSOR RH</td> </tr> <tr> <td>Connector Type</td> <td>AAZ02FB1</td> </tr> </table>  	Connector No.	E27	Connector Name	FRONT WHEEL SENSOR RH	Connector Type	AAZ02FB1	<table border="1"> <tr> <td>Terminal No.</td> <td>Color of Wire</td> <td>Signal Name [Specification]</td> </tr> <tr> <td>1</td> <td>B</td> <td></td> </tr> <tr> <td>2</td> <td>W</td> <td></td> </tr> </table>	Terminal No.	Color of Wire	Signal Name [Specification]	1	B		2	W							
Connector No.	E27																					
Connector Name	FRONT WHEEL SENSOR RH																					
Connector Type	AAZ02FB1																					
Terminal No.	Color of Wire	Signal Name [Specification]																				
1	B																					
2	W																					

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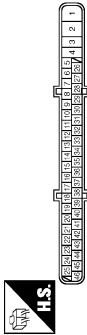
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

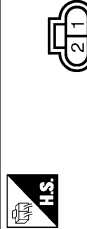
BRAKE CONTROL SYSTEM

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	BSA4ZFB-AH2F-LH



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	GND
2	G	UBMR
3	R	UBVR
4	Y	GND
5	Y	DS FL
6	O	DP RL
7	BR	DP RR
9	B	DP FR
10	W	DS FR
11	V	DIAG-K
12	L	VAC

Connector No.	E80
Connector Name	FRONT WHEEL SENSOR LH
Connector Type	AAZ02FB1



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	Y	-

Terminal No.	Color of Wire	Signal Name [Specification]
14	P	CAN-L
15	SHIELD	AGND
19	P	UST
25	Y	BUS-L
26	R	DP FL
27	GR	DS RL
28	G	UZ
29	LG	DS RR
30	SB	BLS
31	R	VDC OFF SW
35	L	CAN-H
45	B	BUS-H

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
1F	SB	-
2F	W	-
8F	L	-

Connector No.	E47
Connector Name	BRAKE FLUID LEVEL SWITCH
Connector Type	YY02FGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	B	-

Connector No.	E104
Connector Name	WIRE TO WIRE
Connector Type	NS12AMW-CS



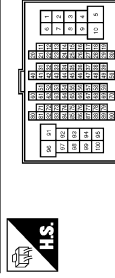
Terminal No.	Color of Wire	Signal Name [Specification]
9	LG	-
10	BR	-
11	O	-
12	GR	-

Connector No.	E49
Connector Name	VACUUM SENSOR
Connector Type	YE208FDGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	VCC(+5V)
2	SHIELD	GND
3	P	OUTPUT SIGNAL

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
28	G	-
29	LG	-
47	L	-
48	P	-
51	B	-
52	Y	-
53	V	-
54	R	-
73	R	-

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ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

BRAKE CONTROL SYSTEM

Connector No.	E107
Connector Name	PARKING BRAKE SWITCH
Connector Type	TE01FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	-

Connector No.	E110
Connector Name	STOP LAMP SWITCH
Connector Type	MD4FW-LC



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	SB	-
3	L	-
4	W	-

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-M2



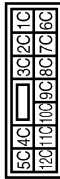
Terminal No.	Color of Wire	Signal Name [Specification]
1A	O	-
2A	G	-
5A	V	-

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
8B	Y	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
12C	R	-

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS1P-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
28	GR	-
47	L	-
48	P	-
51	SB	-
52	Y	-
53	V	-
54	BR	-
73	W	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS1P-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
80	L	-
81	P	-
82	L	-
83	P	-

Connector No.	M19
Connector Name	VDC OFF SWITCH
Connector Type	TK08FGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	-
2	B	-

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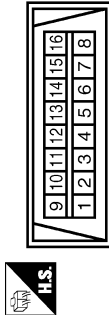
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

BRAKE CONTROL SYSTEM

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



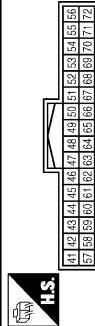
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
7	GR	-
14	P	-

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH16FW-NH



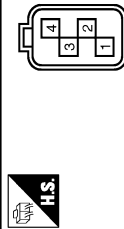
Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
7	B	GND
8	GR	IGN

Connector No.	M67
Connector Name	UNIFIED METER AND A / C AMP.
Connector Type	TH32FW-NH



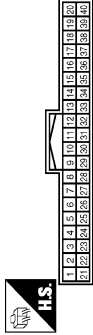
Terminal No.	Color of Wire	Signal Name [Specification]
41	V	ACC
53	G	IGN
54	Y	BAT
55	B	GND
56	L	CAN-H
57	W	BRAKE FLUID LEVEL SW
71	B	GND
72	P	CAN-L

Connector No.	M143
Connector Name	YAW RATE / SIDE G SENSOR
Connector Type	AA204FE



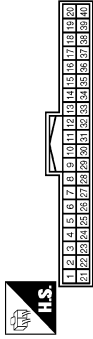
Terminal No.	Color of Wire	Signal Name [Specification]
1	B	GND
2	Y	BUS-L
3	SB	BUS-H
4	G	12V

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	BAT
2	LG	COMM (METER->AMP)
3	GR	COMM (AMP->METER)
3	B	GND
13	B	GND
21	R	IGN
22	B	GND
24	BR	COMM (LCD->AMP)
25	Y	COMM (AMP->LCD)
27	V	PARKING BRAKE SW
28	W	BRAKE FLUID LEVEL SW

Connector No.	M66
Connector Name	UNIFIED METER AND A / C AMP.
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	COMM (AMP->METER)
14	BR	COMM (LCD->AMP)
27	LG	COMM (METER->AMP)
30	V	PARKING BRAKE SW
34	Y	COMM (AMP->LCD)

Fail-Safe

ABS, EBD SYSTEM

If ABS malfunction electrically, ABS warning lamp, VDC OFF indicator lamp, SLIP indicator lamp will turn on. If EBD malfunction electrically, brake warning lamp, ABS warning lamp, VDC OFF indicator lamp and SLIP indicator lamp will turn on. Simultaneously, the VDC/TCS/ABS become one of the following conditions of the fail-safe function.

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ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

- For malfunction of ABS, only the EBD is activated and the condition of vehicle is the same condition of vehicles without TCS/ABS system.

NOTE:

ABS self-diagnosis sound may be heard. That is a normal condition because a self-diagnosis for "Ignition switch ON" and "The first starting" are being performed.

- For malfunction of EBD, EBD and ABS become inoperative, and the condition of vehicle is the same as the condition of vehicles without TCS/ABS, EBD system.

VDC/TCS

If VDC/TCS/ABS system malfunction electrically, VDC OFF indicator lamp, SLIP indicator lamp are turned on, and the condition of vehicle is the same as the condition of vehicles without VDC/TCS control.

CAUTION:

If the Fail-Safe function is activated, then perform self-diagnosis for VDC/TCS/ABS control system.

LDW/LDP SYSTEM

- In case of malfunction in the LDW/LDP system, lane departure warning lamp is turned ON, and the condition of vehicle is the same as the condition of vehicles without LDW/LDP control.
- In case of malfunction in the VDC/TCS/ABS system, lane departure warning lamp is turned ON, and the condition of vehicle is the same as the condition of vehicles without LDW/LDP control.

DTC Index

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DTC	Items (CONSULT screen terms)	Reference
C1101	RR RH SENSOR-1	BRC-50, "DTC Logic"
C1102	RR LH SENSOR-1	
C1103	FR RH SENSOR-1	
C1104	FR LH SENSOR-1	
C1105	RR RH SENSOR-2	BRC-53, "DTC Logic"
C1106	RR LH SENSOR-2	
C1107	FR RH SENSOR-2	
C1108	FR LH SENSOR-2	
C1109	BATTERY VOLTAGE [ABNORMAL]	BRC-56, "DTC Logic"
C1110	CONTROLLER FAILURE	BRC-58, "DTC Logic"
C1111	PUMP MOTOR	BRC-59, "DTC Logic"
C1114	MAIN RELAY	BRC-61, "DTC Logic"
C1115	ABS SENSOR [ABNORMAL SIGNAL]	BRC-63, "DTC Logic"
C1116	STOP LAMP SW	BRC-66, "DTC Logic"
C1120	FR LH IN ABS SOL	BRC-68, "DTC Logic"
C1121	FR LH OUT ABS SOL	BRC-70, "DTC Logic"
C1122	FR RH IN ABS SOL	BRC-68, "DTC Logic"
C1123	FR RH OUT ABS SOL	BRC-70, "DTC Logic"
C1124	RR LH IN ABS SOL	BRC-68, "DTC Logic"
C1125	RR LH OUT ABS SOL	BRC-70, "DTC Logic"
C1126	RR RH IN ABS SOL	BRC-68, "DTC Logic"
C1127	RR RH OUT ABS SOL	BRC-70, "DTC Logic"
C1130	ENGINE SIGNAL 1	BRC-72, "DTC Logic"
C1137	RAS CIRCUIT (Note 1)	BRC-73, "DTC Logic"
C1142	PRESS SEN CIRCUIT	BRC-74, "DTC Logic"
C1143	ST ANG SEN CIRCUIT	BRC-76, "DTC Logic"
C1144	ST ANG SEN SIGNAL	BRC-78, "DTC Logic"

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

DTC	Items (CONSULT screen terms)	Reference	
C1145	YAW RATE SENSOR	BRC-79, "DTC Logic"	A
C1146	SIDE G-SEN CIRCUIT		
C1147	USV LINE [FL-RR]	BRC-82, "DTC Logic"	B
C1148	USV LINE [FR-RL]		
C1149	HSV LINE [FL-RR]		
C1150	HSV LINE [FR-RL]		
C1153	EMERGENCY BRAKE	BRC-58, "DTC Logic"	
C1154	PNP POSI SIG	BRC-85, "DTC Logic"	D
C1155	BR FLUID LEVEL LOW	BRC-87, "DTC Logic"	
C1156	ST ANG SEN COM CIR	BRC-89, "DTC Logic"	
C1170	VARIANT CORDING	BRC-58, "DTC Logic"	E
C1185	ACC CONT (Note 2)	BRC-90, "DTC Logic"	
C1197	VACUUM SENSOR (Note 3)	BRC-91, "DTC Logic"	F
C1198	VACUUM SEN CIR (Note 3)	BRC-93, "DTC Logic"	
C1199	BRAKE BOOSTER (Note 3)	BRC-95, "DTC Logic"	
C119A	VACUUM SEN VOLT (Note 3)	BRC-97, "DTC Logic"	G
U1000	CAN COMM CIRCUIT	BRC-99, "DTC Logic"	
U1002	SYSTEM COMM		
U1100	ACC COMM CIRCUIT (Note 2)	BRC-100, "DTC Logic"	H
C1B00	LDP) CAMERA MALF (Note 4)	CCS-456, "DTC Logic"	
C1B04	LDP) ICC STG SW MALF (Note 4)	CCS-457, "DTC Logic"	I
C1B05	LDP) APP SEN MALF (Note 4)	CCS-458, "DTC Logic"	
C1B06	LDP) TCM MALF (Note 4)	CCS-459, "DTC Logic"	J
U0100	LDP) ECM CAN CIR2 (Note 4)	CCS-460, "DTC Logic"	
U0101	LDP) TCM CAM CAN CIR2 (Note 4)	CCS-462, "DTC Logic"	
U0104	LDP) ICC CAM CAN CIR2 (Note 4)	CCS-464, "DTC Logic"	K
U0405	LDP) ICC CAM CAN CIR1 (Note 4)	CCS-465, "DTC Logic"	
U1500	LDP) CAM CAN CIR1 (Note 4)	CCS-466, "DTC Logic"	
U1501	LDP) CAM CAN CIR2 (Note 4)	CCS-467, "DTC Logic"	L

NOTE:

- 1: With RAS models
- 2: With ICC models
- 3: With VK50VE models
- 4: With LDP models

CCS

LDW & LDP SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

SYMPTOM DIAGNOSIS

LDW & LDP SYSTEM SYMPTOMS

Symptom Table

INFOID:000000003867117

CAUTION:

Perform the self-diagnosis with CONSULT-III before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom	Possible cause	Inspection item/Reference page	
Indicator/warning lamps do not illuminate when ignition switch OFF ⇒ ON.	Lane departure warning lamp (Yellow) does not illuminate.	<ul style="list-style-type: none"> • Lane departure warning lamp signal (CAN) - Unified meter and A/C amp. - Lane camera unit • Lane departure warning lamp (Combination meter) 	<ul style="list-style-type: none"> • LANE CAMERA Active test "LANE DEPARTURE W/L" • METER/M&A Data monitor "LANE W/L"
	LDP ON indicator lamp (Green) does not illuminate.	<ul style="list-style-type: none"> • LDP ON indicator lamp signal (CAN) - Unified meter and A/C amp. - Lane camera unit • LDP ON indicator lamp (Combination meter) 	<ul style="list-style-type: none"> • LANE CAMERA Active test "LDP ON IND" • METER/M&A Data monitor "LDP IND"
	LDW ON indicator (on the LDW switch) does not illuminate.	<ul style="list-style-type: none"> • Harness between lane camera unit and LDW switch. • LDW ON indicator (LDW switch) • Lane camera unit 	LDW ON indicator circuit CCS-471
	Lane departure warning lamp (Yellow) and LDP ON indicator lamp (Green) do not illuminate.	<ul style="list-style-type: none"> • Combination meter • Unified meter and A/C amp. • Lane camera unit 	—
	All of indicator/warning lamps do not illuminate; • Lane departure warning lamp (Yellow) • LDP ON indicator lamp (Green) • LDW ON indicator	<ul style="list-style-type: none"> • Power supply and ground circuit of lane camera unit • Lane camera unit 	Power supply and ground circuit of lane camera unit CCS-468
	LDW ON indicator is not turned ON ⇔ OFF when operating LDW switch.	<ul style="list-style-type: none"> • Harness between lane camera unit and LDW switch. • Harness between LDW switch and ground. • Lane camera unit 	LDW switch circuit CCS-469
LDW system is not activated. (Indicator/warning lamps illuminate when ignition switch OFF ⇒ ON.)	Lane departure warning buzzer is not sounding. (Lane departure warning lamp is activated.)	<ul style="list-style-type: none"> • Harness between the fuse and lane departure warning buzzer. • Harness between lane camera unit and lane departure warning buzzer. • Harness between lane departure warning buzzer and ground. • Lane departure warning buzzer • Lane camera unit 	Lane departure warning buzzer circuit CCS-473
	Lane departure warning lamp is not activated. (Lane departure warning buzzer is sounding.)	Lane camera unit	—

LDW & LDP SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

Symptom	Possible cause	Inspection item/Reference page
LDP system is not activated. (LDW system is functioning normally)	LDP ON indicator lamp is not turned ON ⇔ OFF when operating LDP ON switch.	LDP ON switch (ICC steering switch)
	Warning is functioning but yawing is not functioning.	—
	Yawing is functioning but warning is not functioning.	<ul style="list-style-type: none"> • ABS actuator and electric unit (control unit) • Lane camera unit
Warning functions are not timely. (Example)	<ul style="list-style-type: none"> • Camera aiming adjustment • Lane camera unit 	Camera aiming adjustment CCS-418
Functions when changing the course in direction of the turn signal.	Turn signal <ul style="list-style-type: none"> • BCM • Lane camera unit 	LANE CAMERA Data monitor "TURN SIGNAL"

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NORMAL OPERATING CONDITION

Description

INFOID:000000003867118

LANE DEPARTURE WARNING (LDW)

- LDW system is only a warning device to inform the driver of a potential unintended lane departure. It does not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of the vehicle at all times.
- LDW system does not operate at speeds below approximately 72 km/h (45 MPH) or if it cannot detect lane markers.
- Excessive noise interfere with the warning sound, and the buzzer may not be heard.
- LDW system may not function properly under the following conditions:
 - On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; non-standard lane markers; or covered with water, dirt or snow, etc.
 - On roads where the discontinued lane markers are still detectable.
 - On roads where there are sharp curves.
 - On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs. (The LDW system could detect these items as lane markers.)
 - On roads where the traveling lane merges or separates.
 - When the vehicle's traveling direction does not align with the lane marker.
 - When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection range.
 - When rain, snow or dirt adheres to the windshield in front of the lane camera unit.
 - When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly.
 - When strong light enters the lane camera unit. (For example, the light directly shines on the front of the vehicle at sunrise or sunset.)
 - When a sudden change in brightness occurs. (For example, when the vehicle enters or exits a tunnel or under a bridge.)

LANE DEPARTURE PREVENTION (LDP)

- LDP system does not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of vehicle at all times.
- LDP system is primarily intended for use on well-developed freeways or highways. It may not detect the lane markers in certain roads, weather or driving conditions.
- Using the LDP system under some conditions of road, lane marker or weather, or when driver changes lanes without using the turn signal could lead to an unexpected system operation. In such conditions, driver needs to correct the vehicle's direction with driver's steering operation to avoid accidents.
- When the LDP system is operating, avoid excessive or sudden steering maneuvers. Otherwise, driver could lose control of the vehicle.
- The LDP system does not operate at speeds below approximately 72 km/h (45 MPH) or if it cannot detect lane markers.
- The LDP system may not function properly under the following conditions, and do not use the LDP system:
 - During bad weather (rain, fog, snow, wind, etc.).
 - When driving on slippery roads, such as on ice or snow, etc.
 - When driving on winding or uneven roads.
 - When there is a lane closure due to road repairs.
 - When driving in a makeshift lane.
 - When driving on roads where the lane width is too narrow.
 - When driving without normal tire conditions (for example, tire wear, low tire pressure, installation of spare tire, tire chains, non-standard wheels).
 - When the vehicle is equipped with non-original brake parts or suspension parts.
- Excessive noise does interfere with the warning sound, and the buzzer may not be heard.
- The functions of the LDP system (warning and brake control assist) may or may not operate properly under the following conditions:
 - - On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; non-standard lane markers or covered with water, dirt or snow, etc.
 - On roads where discontinued lane markers are still detectable.
 - On roads where there are sharp curves.
 - On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs (The LDP system could detect these items as lane markers.).

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

- On roads where the traveling lane merges or separates. A
- When the vehicle's traveling direction does not align with the lane marker. A
- When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection range. A
- When rain, snow or dirt adheres to the windshield in front of the lane camera unit. B
- When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly. B
- When strong light enters the lane camera unit (For example, the light directly shines on the front of the vehicle at sunrise or sunset.) B
- When a sudden change in brightness occurs (For example, when the vehicle enters or exits a tunnel or under a bridge.) C
- While the LDP system is operating, driver may hear a sound of brake operation. This is normal and indicates that the LDP system is operating properly. D

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PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000003867119

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precaution for LDW/LDP System Service

INFOID:000000003867120

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

- Never use the LDP system when driving with free rollers or a chassis dynamometer.
 - Never perform the active test while driving.
 - Never disassemble and remodel the lane camera unit.
 - Do not use the lane camera unit that is removed from the vehicle.
 - Never change LDW initial state ON ⇒ OFF without the consent of the customer.
- To keep the LDW/LDP system operating properly, be sure to observe the following items:
- Always keep the windshield clean. The sensing capability of the camera unit depends on the condition of the windshield. See "Appearance and care" for cleaning instructions.
 - Never strike or damage the areas around the lane camera unit.
 - Never touch the camera lens.
 - Never attach a sticker (including transparent material) or install an accessory near the lane camera unit.
 - Never place reflective materials, such as a white paper or mirrors on the instrument panel. Reflection of the sunlight may adversely affect the camera unit's lane marker detection capability.

LANE CAMERA UNIT

< REMOVAL AND INSTALLATION >

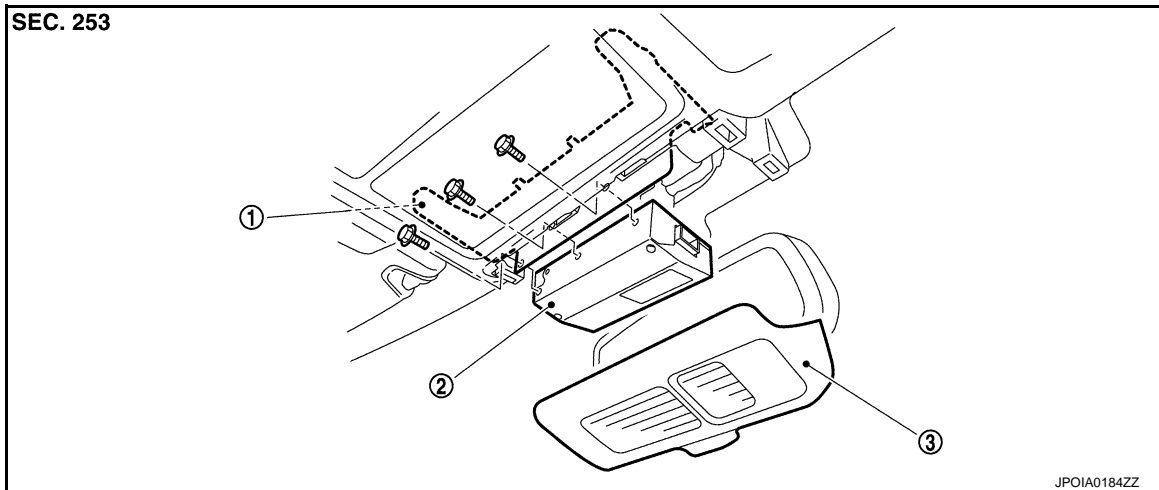
[LDW & LDP]

REMOVAL AND INSTALLATION

LANE CAMERA UNIT

Exploded View

INFOID:000000003867121



1. Lane camera bracket

2. Lane camera unit

3. Lane camera cover

Removal and Installation

INFOID:000000003867122

REMOVAL

1. Remove the lane camera cover.
2. Remove the sun-visor holder and front roof finisher. And then disengage front side metal clip of the map lamp assembly. Keep a service area. Refer to [INT-23, "Exploded View"](#).
3. Remove the bolts.
4. Disconnect lane camera unit connector, and remove lane camera unit.

NOTE:

When replace the lane camera bracket, remove the headlining assembly.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

- Remove the camera lens cap for replacement.
- Never give an impact to the lane camera unit.
- Perform the camera aiming every time the lane camera unit is removed and installed. Refer to [CCS-418, "CAMERA AIMING ADJUSTMENT : Description"](#).

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LDW SWITCH

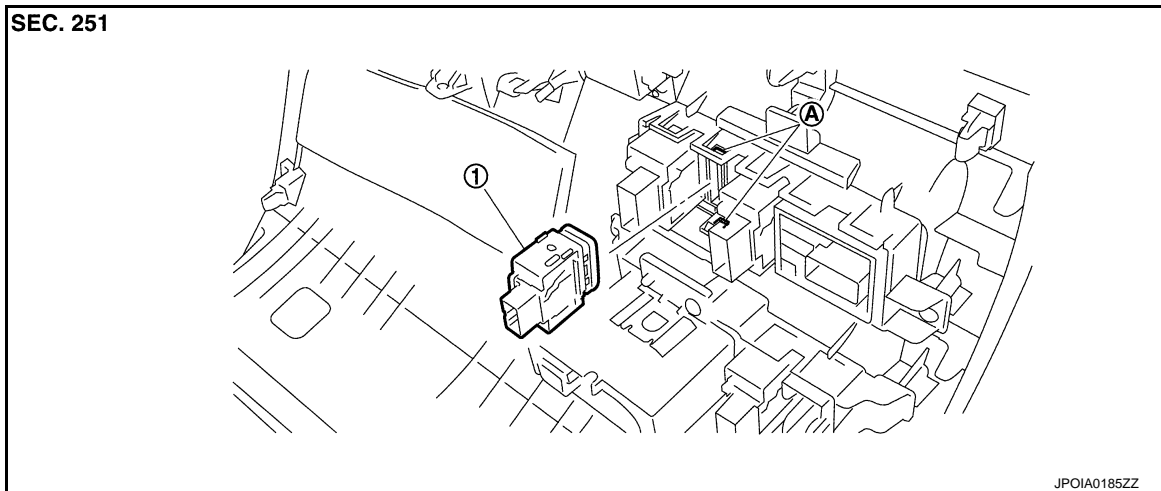
< REMOVAL AND INSTALLATION >

[LDW & LDP]

LDW SWITCH

Exploded View

INFOID:000000003867123



- 1. LDW switch
- A. Pawls

Removal and Installation

INFOID:000000003867124

REMOVAL

1. Remove the instrument driver lower panel. Refer to [IP-11, "Exploded View"](#).
2. Disengage the pawls. Then remove LDW switch.

INSTALLATION

Install in the reverse order of removal.

LANE DEPARTURE WARNING BUZZER

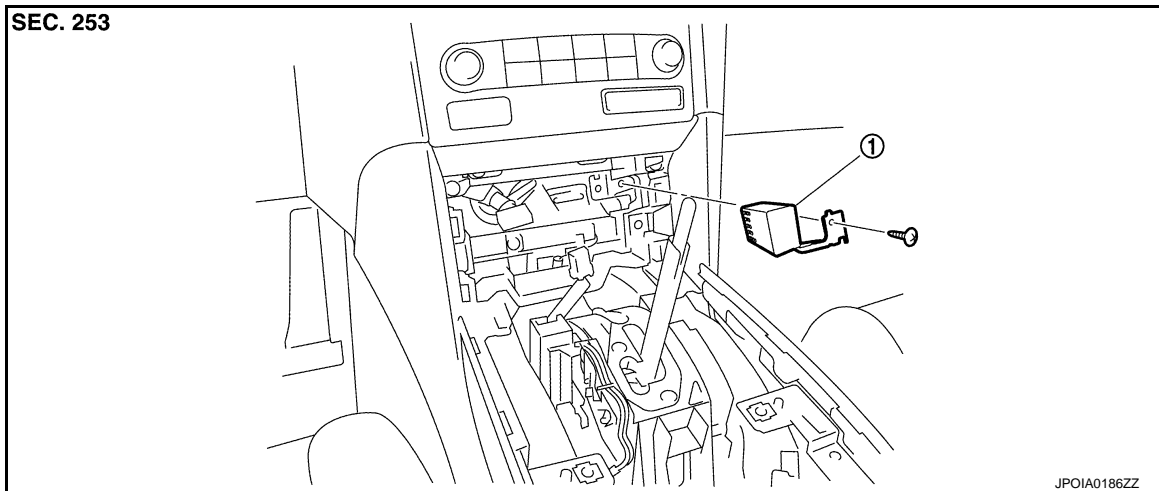
< REMOVAL AND INSTALLATION >

[LDW & LDP]

LANE DEPARTURE WARNING BUZZER

Exploded View

INFOID:000000003867125



1. Lane departure warning buzzer

Removal and Installation

INFOID:000000003867126

REMOVAL

1. Remove the console finisher assembly. Refer to [IP-22, "Exploded View"](#).
2. Remove the sonar control unit. Refer to [AV-603, "Exploded View"](#) [NAVIGATION (SINGLE MONITOR)] or [AV-1066, "Exploded View"](#) [NAVIGATION (TWIN MONITOR)].
3. Remove the screw.
4. Disconnect the connector. And remove lane departure warning buzzer.

INSTALLATION

Installation is the reverse order of removal.

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LDP ON SWITCH

< REMOVAL AND INSTALLATION >

[LDW & LDP]

LDP ON SWITCH

Exploded View

INFOID:000000003867127

LDP ON switch is integrated in the ICC steering switch. Refer to [ST-16. "Exploded View"](#).